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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Expanding outside telephone plant to meet today's surging demand for service is the No. 1 problem of telephone companies across the nation. Here James Harwell (left) and Roy Palmer of the Standard Telephone Co. are installing new facilities to serve area near Cornelia, Ga.

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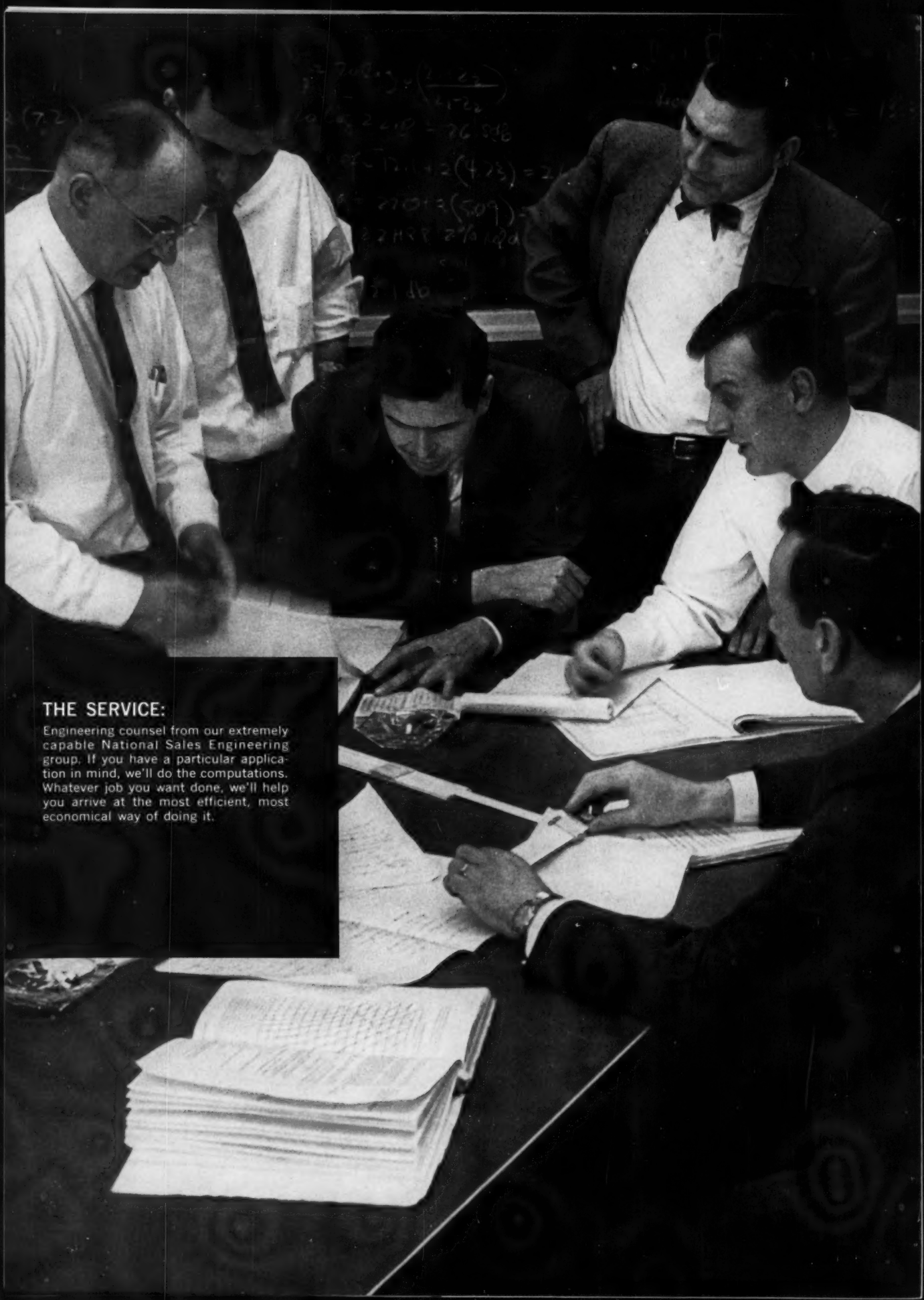

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FLASHES AND PLUGS

THUMPING HOME THE MESSAGE. His was a compassionate wife after she slugged her husband on the head with a telephone receiver and inflicted a one-inch gash, Topeka (Kan.) police reported.

It seems, the couple had quarreled and the wife wanted to call police, but her husband tried to stop her. That's when she stopped him by letting him have it with the receiver.

Then, she called police for first aid.—from "Highlights"—Southwestern Bell Telephone *News*.

•

SOMETHING MISSING. The Milwaukee, Wis. merchant police got a telephone call recently from a local department store for a watchman.

The merchant police supervisor, his curiosity whetted, wanted to know why the store wanted a watchman in the middle of the day.

As the story unfolded, it turned out that the caller was the store's new maintenance man. He wanted to turn on the power saw in the store's carpenter shop.

The supervisor still didn't understand and asked, "But what do you need a policeman for?"

His caller explained as follows: "There's this sign above the saw. It says: 'Do not operate power saw without the guard.' "

•

UNBEARABLE. Telephone installers and repairmen who think that fighting off Fido is a hazard of their occupation, should take heed of the hazards faced by Hubert Empey, a British Columbia Telephone Co. repairman.

Mr. Empey was sent out to discover what the trouble was with the telephone at the forest ranger's cabin on Hollyburn Mountain.

To reach his destination he had to ride the chair lift up the mountain and hike a mile through the bush to the line. Once there, he analyzed the trouble as a short and traced it to a nearby lodge on the same party line with the ranger's telephone.

The door of the lodge, which is used only on weekends, was locked. However, Mr. Empey heard movements inside.

He rattled the door, startling a 300-pound bear which inquisitively poked its head out of a side window.

Frightened, the animal leaped from the window. Mr. Empey entered through the window and found that the bear had knocked the receiver off the hook. He replaced the receiver, exited through the window, hiked back to the chair lift and rode back to his office. There he wrote "trouble cleared" in the log.

A routine case, Mr. Empey commented, when queried.

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Telephony

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1901 — 60 years — 1961

September 16, 1961

CONTENTS

IN THE NATION'S CAPITAL 17
By Lawrence J. Hogan

JOINT TELEPHONE AND POWER BURIED CONSTRUCTION, PART 2 20
By Ray Blain

THE PLANT MAN'S NOTEBOOK 24
By Ray Blain

COURTS AND COMMISSIONS 25

THE THREE S's SAFETY—SERVICE—SALES 27
By Ben Smith

NEWS ON NEW PRODUCTS 47

H. D. FARGO JR., *President and Director of Advertising* • A. J. STULTS, *Vice President and Advertising Manager* • R. C. RENO, *Vice President and Editor* • DAN S. FARGO, *Vice President and Managing Editor* • DIANNE P. DRUCKER, *Associate Editor* • HELEN HARDIN, *Associate Editor* • LAWRENCE J. HOGAN, *Washington Editor* • RAY BLAIN, *Technical Editorial Director* • PAUL E. MURPHY, *Electronics Editor* • MAYME WORKMAN, *Traffic Editor* • VIVIAN RYDEN, *Circulation Manager*.

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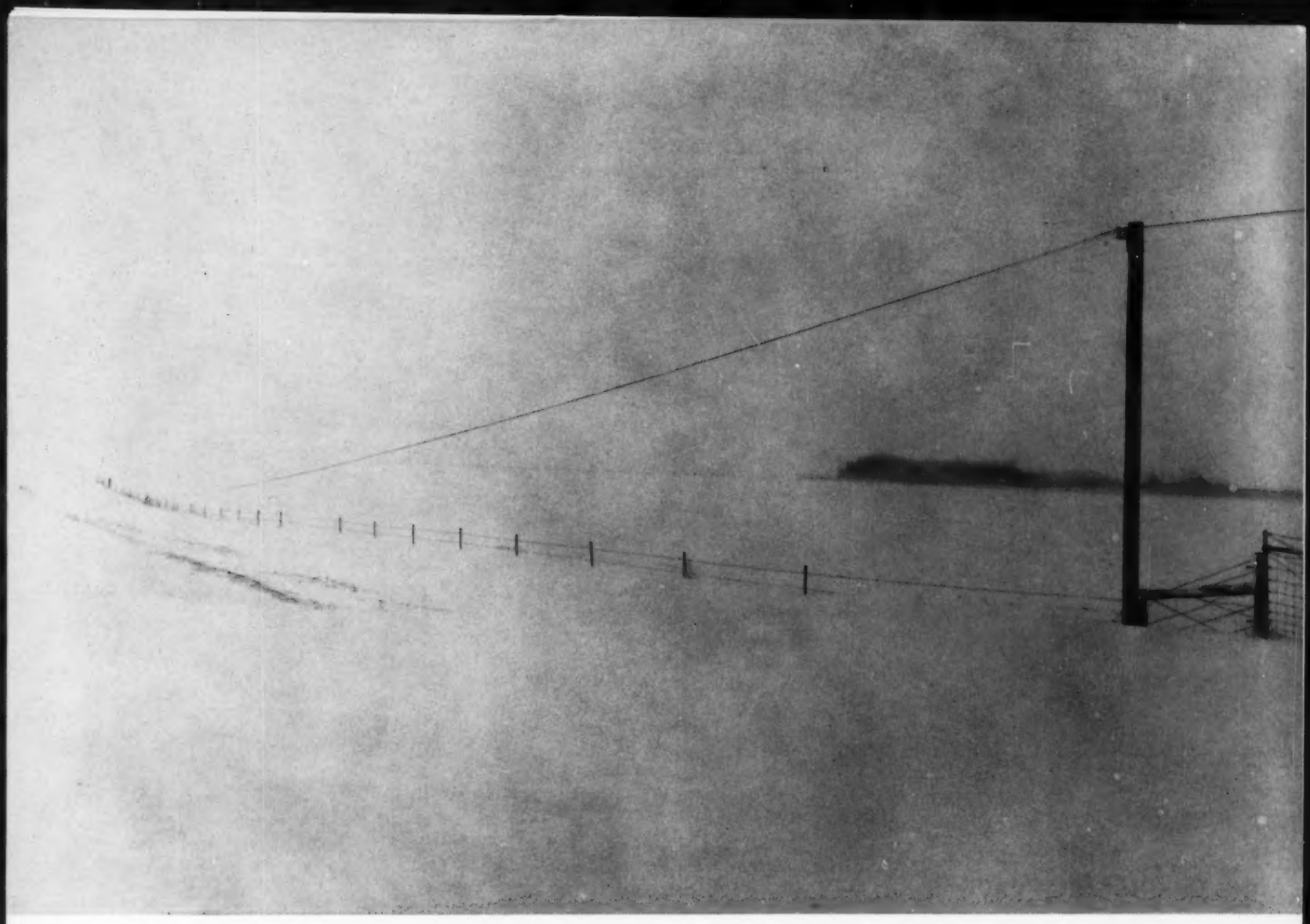
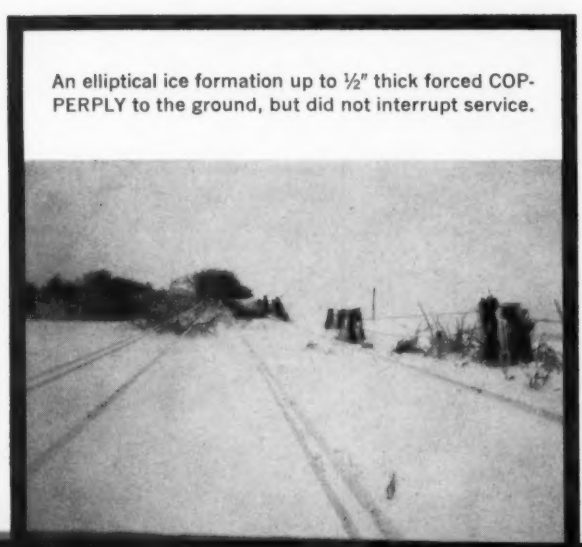


"The lines are down... but I hear you perfectly"

These words came from a Tyler, Minnesota farm wife during a severe ice storm last winter. She could see that the lines were down. But there was no interruption in service.

Throughout the entire countryside around Tyler, the Tyler Telephone Company had installed .080-25 COPPERPLY conductor wire in new long-span lengths (up to 1900 feet between poles) to test a completely new concept in aerial insulated wire plant. By stringing insulated COPPERPLY over such long spans, it is possible for the wire to rest on the ground, when loaded with ice, before it reaches 55% of ultimate strength. When the ice load melts, COPPERPLY returns to the normal unloaded height above the ground.



An elliptical ice formation up to ½" thick forced COPPERPLY to the ground, but did not interrupt service.

At Tyler, National-Standard COPPERPLY remained under three feet of snow in some places for as long as three months, with no interruption in line service. In addition, long-span systems cut installation costs, eliminated the problem of mid-span hits, reduced tree trimming and maintenance costs. For information on the complete line of COPPERPLY conductors, write National-Standard Company, Niles, Michigan. C-61-2

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Niles, Michigan

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New Type 60 Loading Coils are another way for you to provide top transmission standards for present-day outside plant. Whatever your needs for better transmission—whether it's loading coils, repeaters or cable—*AE has it!*

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flexibility, faster installation

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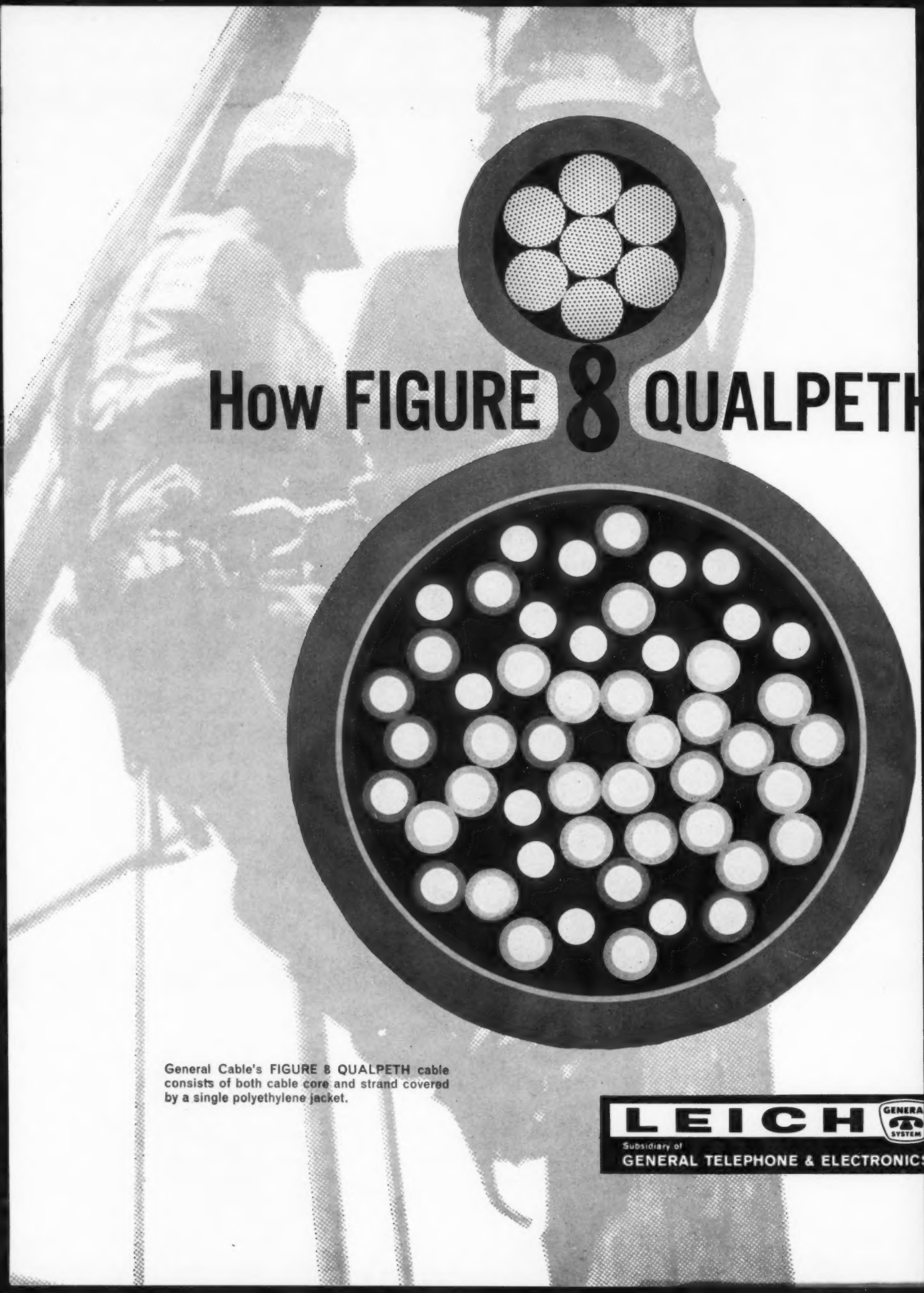
Ask for Circular 1978. It describes new Type 60 Loading Coils in detail and gives full ordering information. For your copy, write: Automatic Electric Sales Corporation, Northlake, Illinois



General Cable's FIGURE 8 QUALPETH cable consists of both cable core and strand covered by a single polyethylene jacket.

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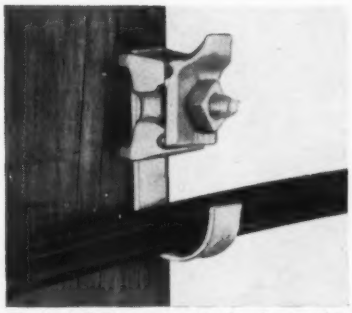
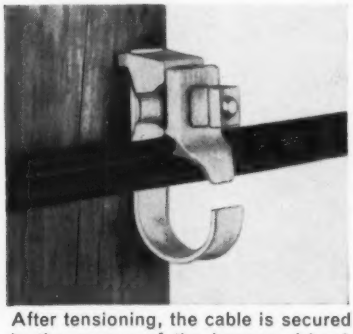


To install Figure 8, simply place cable over the j-hook of the cable hanger prior to tensioning.



After tensioning, the cable is secured in the groove of the hanger. J-hook now serves as safety strap. No separate strand placing. No cable spinning.

General Cable's Figure 8 Qualpeth cuts your installation costs lower than ever before. With Figure 8 Qualpeth you eliminate the time and money-consuming operations of strand placing and cable spinning.

Figure 8 Qualpeth is one complete unit. It consists of both the cable core and strand covered by a single polyethylene jacket. You simply place the cable onto a special cable hanger and sag the cable by proper tensioning of the strand. After tensioning, the cable is secured in the hanger.

By eliminating the strand placing and cable spinning operations, you reduce labor costs, installation time, and transportation costs.

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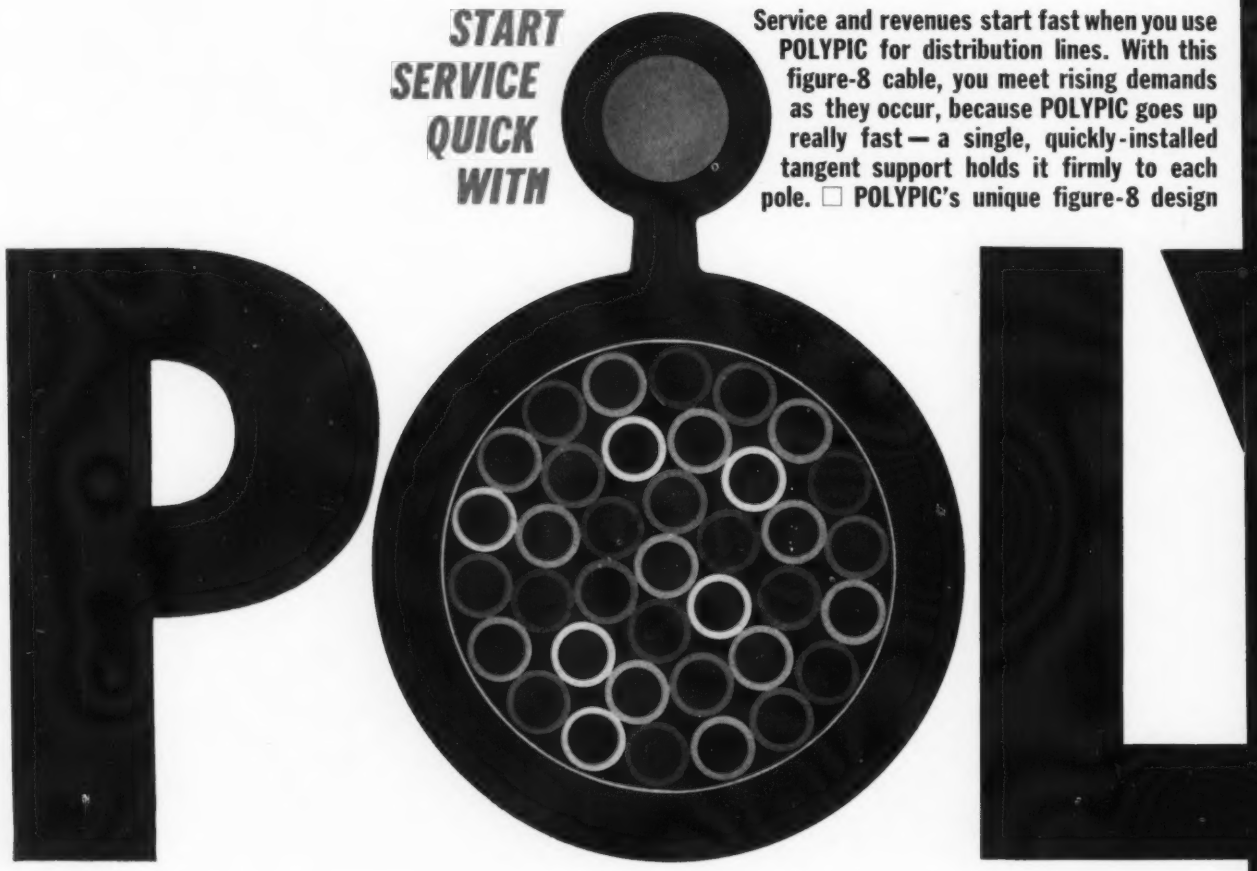

improves transmission over former RD cable because of lower variations of mutual capacitance between wet and dry conditions. And its high molecular weight polyethylene jacket, over both messenger and cable, gives excellent mechanical protection and long service life. □ Get details on POLYPIC from your distributor, or write General Cable Corp., 730 Third Avenue, New York 17, New York □ Distributed by: Automatic Electric Sales Corporation, Northlake, Illinois; Leich Sales Corporation, 427 West Randolph Street, Chicago 6, Illinois

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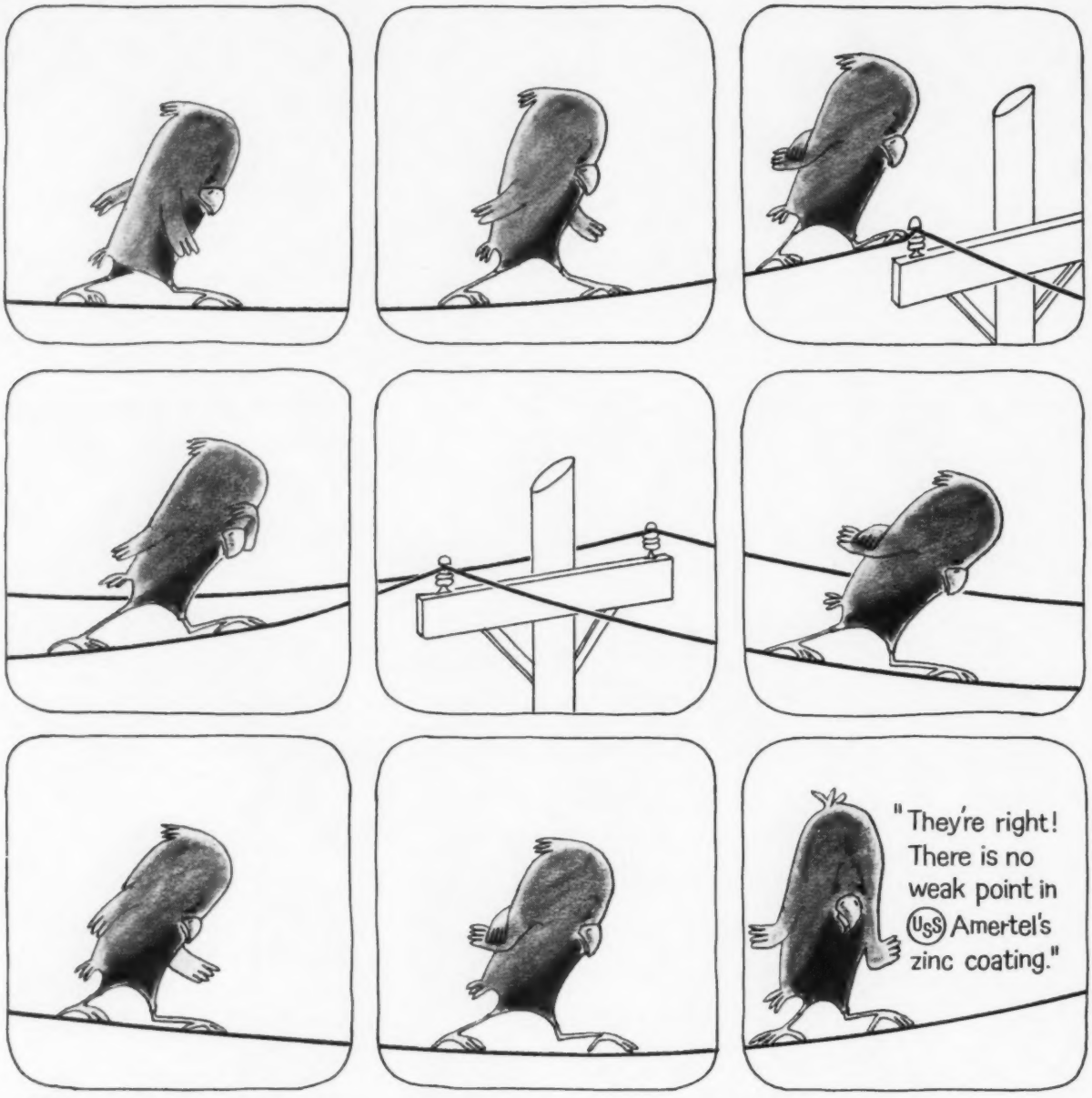

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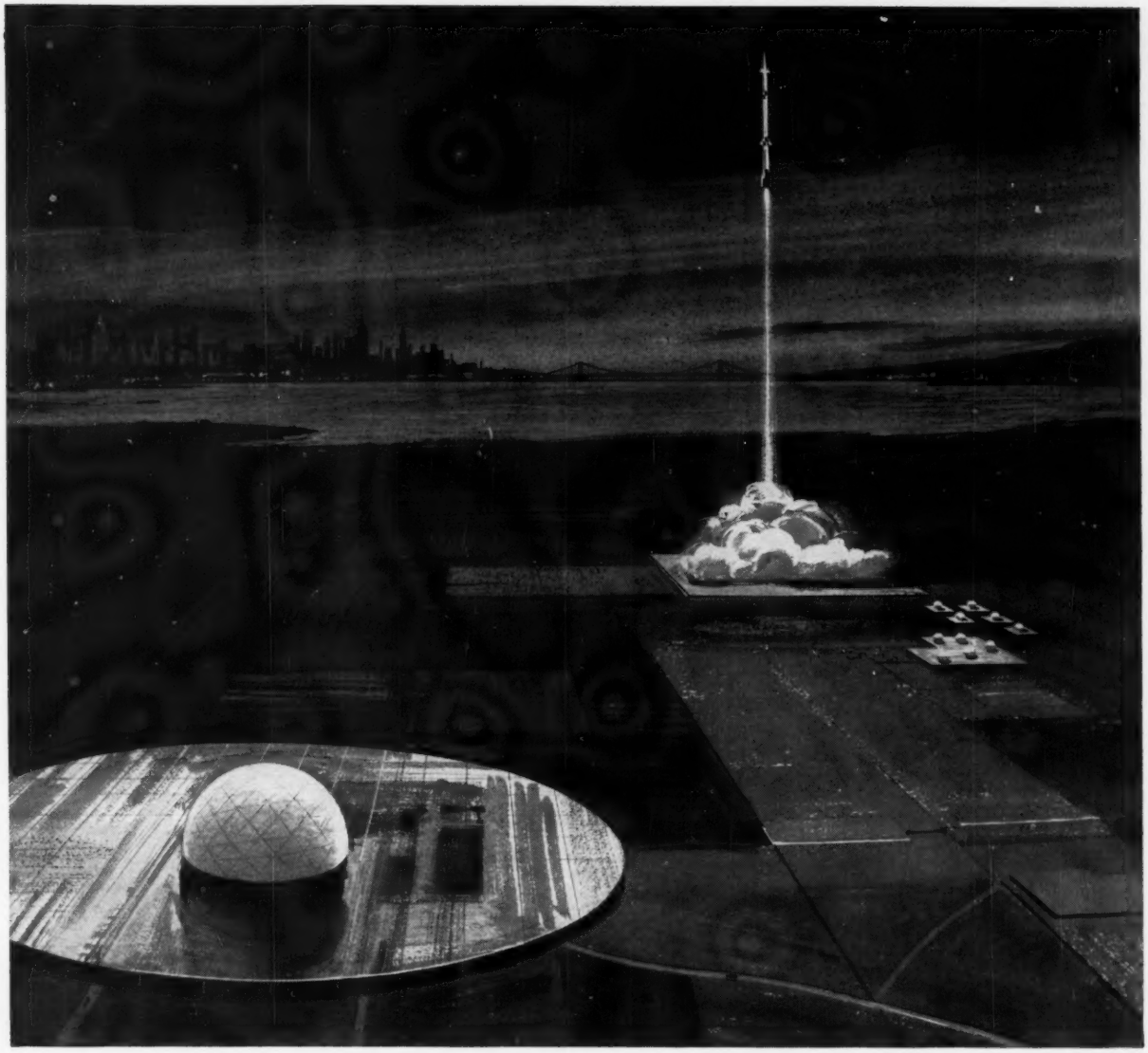

More than 450,000 pounds of thrust lifts the U. S. Army's Nike Zeus missile skyward in a cloud of vapor. The Nike Zeus missile being developed for the project by the Douglas Aircraft Company will be designed to intercept ballistic missiles traveling over 15,000 miles per hour, and destroy them at a safe distance from the defended area.

How do you stop an ICBM?

How do you detect, track, intercept—and destroy within minutes—an ICBM that is moving through outer space ten times faster than a bullet?

Bell Telephone Laboratories may have designed the answer: Nike Zeus, a fully automated system designed to intercept and destroy all types of ballistic missiles—not only ICBM's but also IRBM's launched from land, sea or air. The system is now under development for the Army Ordnance Missile Command.

Radically new radar techniques are being developed for Nike Zeus. There will be an acquisition radar designed to detect the invading missile at great distances. And a discrimination radar designed to distinguish actual warheads from harmless decoys that may be included to confuse our defenses.

The system tracks the ICBM or IRBM, then launches and tracks the Nike Zeus missile and automatically steers it all the way to intercept the target. The entire engagement, from detection to destruction, would take place within minutes and would span hundreds of miles.

Under a prime Army Ordnance contract with the Western Electric Company, Bell Laboratories is charged with the development of the entire Nike Zeus system, with assistance from many subcontractors. It is another example of the cooperation between Bell Laboratories and Western Electric for the defense of America.

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan & Associates

Washingtonians (and we might add they are not alone) hoping Congress will go home soon. New Welch book on utility regulation published. FCC Chairman Minow butt of TV comedians' jokes. Baltimore store's "Shop-by-Phone" program pays off.

A SEASONAL malady grips this Capital City: Adjournment fever. Although widespread and intense, a cure is in sight. Acting Speaker of the House John McCormack (D., Mass.), sitting in for Sam Rayburn who is back in Texas nursing a back ailment, wants to put up the House shutters about Sept. 23 while Senate Majority Leader Mike Mansfield (D., Okla.) doesn't think the senior solons will be able to pack up until Oct. 1.

Meanwhile, Washingtonians, like yawning hosts staring at the clock, hoping their guests will take the hint, exchange glances and say, "Why don't they go?"

Standing between the Senate and adjournment are four appropriations bills and perhaps a civil rights debate. Members of the House which has only a few odds and ends lying around have been visiting the Senate, lobbying for adjournment. At least 15 of the senators sat in the chamber dreaming of the trip to the Interparliamentary Conference in Brussels on Sept. 10, which they weren't able to attend.

Legislators wander about the cloakroom listlessly. Many complain that very little is accomplished by voice vote these days. Everyone must stand up and be counted on every insignificant amendment. "There's no debate up here any more," Sen. Eugene J. McCarthy (D., Minn.) complained, "We just vote all the time. It's like professional basketball—you have to shoot every 20 seconds or you lose the ball."

Fortunately, there's an excellent "home" remedy for adjournment fever: Fresh air and exercise. The freshest air is that which constituents breathe. The best exercise? Pumping hands up and down and mending fences.

Two Bills of Interest

On Sept. 6, Congress did take action on two bills which, while of minor general importance and fairly non-controversial in themselves, should be of considerable interest to telephone companies. One of these actions was final —a bill authorizing the Secretary of Interior to sell certain utility systems on Indian reservations, including telephone facilities. This bill is now at the White House awaiting the President's signature, of which there is no doubt. More about this bill later.

The other bill (H. R. 8038) was the so-called anti-slug bill and was passed by the House of Representatives by a voice vote and sent to the Senate where it will probably be approved, since there is little opposition. This bill tightens up existing law prohibiting the use of tokens, slugs, discs, and similar devices used to counterfeit coins or other currency of the United States for purposes of fraudulently obtaining telephone service—among other benefits.

Getting back to the Indian reservation law, the following excerpt from the report of the Senate Committee on Interior and Insular Affairs tells the story better and quicker than any analysis of the rather obscure language of the bill (S. 1501):

"The Bureau of Indian Affairs operates over 8,500 utility systems at over 400 locations throughout the United States. These systems range from individual water wells to complete telephone systems to serve reservation and administrative areas. It frequently happens that a system which was initially installed to serve a limited purpose can and would be extended by a private utility in order to improve service in a given area. The bureau cannot undertake such expansion unless it is provided necessary appropriations.

"According to departmental witnesses, each year the opportunity arises to sell a small number of existing bureau facilities, but the department is without authority to do so even though such sales would be in the best interest of the government. The purpose of the bill is not to dispose of surplus systems, but to aid in the transfer of such systems and to facilitate the improvement of services to meet not only the needs of the bureau but of the entire local community. The report of the Secretary of the Interior cites two examples—one at Lame Deer, Mont., and the other at Fort Hall, Ida.—where sale of telephone and electrical distribution systems, respectively, would result in better service to the bureau and the general public."

As to the anti-slug bill, the best explanation of what it means and why it was necessary was made on the floor of the House by the lady representative from Missouri, Leonor K. Sullivan, sponsor of the bill, who stated before its passage:

". . . The volume of business in coin-operated machines and devices of various kinds—excluding illicit ones, of course—was about 500 million dollars

a year. In 1960, it was estimated at 2.5 billion dollars, or five times as much, and at the present rate of expansion and with the progress of automation, it is estimated that, by 1965 this volume will reach four billion dollars. And we are no longer dealing only with coin equivalents of one-cent, two-cent, three-cent, or five-cent pieces, but with dimes, quarters, half dollars, and currency up to $20.

"Hence, while it is a federal crime to use counterfeit coins or metal slugs to defraud these automatic devices of a penny, or two cents, or three cents, or a nickel, anything over that is all right as far as the Federal Government is concerned. Obviously, this is a situation which requires correction.

"The telephone industry reported it loses one million dollars a year in slugs. As more and more items are dispensed by machines, more and more industries are going to suffer substantial losses. Currency-changing machines, now in use or coming into operation, change bills up to $10 or $20, and while they are rather sophisticated devices and often able to reject counterfeit, nevertheless, it is strange that it is not a federal crime to attempt to pass counterfeit paper for currency when the attempt involves feeding it into a machine rather than handing it to a person."

One other item of legislative interest. President Kennedy has finally signed into law the Federal Communications Commission reorganization bill allowing decisions and opinions to be delegated to lower levels of the FCC and limiting the right of appeal. This new law has already been explained in this department.

Tax Plan on Shelf

Some of the things which will be left undone by Congress are of the "blessings-in-disguise" variety. For instance, with adjournment in the offing, the House Ways and Means Committee, after wrestling for four months with such controversial items as tax on dividends and expense account restrictions, decided to discontinue its efforts to draft major tax reform legislation at this session of Congress.

Anything as complex as tax reform wouldn't have had much chance of getting anywhere so late in this session. Furthermore, the committeemen should not want to be committed to a bill which might not be appropriate to the needs of the times when Congress comes back next January. During the interim, the committee staff will continue drafting the bill, Chairman Wilbur D. Mills (D., Ark.) said. But instead of picking up the pieces when Congress returns, it might be a sounder idea to sweep the committee room clean and start all over again.

During the lull between sessions, utility companies might find it profitable to tell their congressmen about some of the inequities in the administration's proposals for tax reform. (See "In the Nation's Capital, May 13, 1961). Congress might be more friendly than the administration.

Billfold-size facts card on Southwestern States Telephone Co., Brownwood, Tex. Card folds at three places, and was distributed to each employe in July. It will be passed out to the public on special occasions. R. L. Post, company public relations director, says he'd be glad to send a facts card to anyone requesting it.

President Kennedy's plan discriminates against utilities regarding tax credits. Utilities (except transportation) and the residential construction industry are the only two industries in the economy which would be denied the benefits of the credit. The plan would make available to the business taxpayer a tax credit of 15 per cent of all money spent on new plants and equipment in excess of current depreciation allowances. This credit would be offset against the taxpaying company's liability in any one year. Apparently the rationale behind exclusion of utility companies is that they have a service obligation to build whatever plants or other facilities are needed to render safe, adequate and efficient service to the public. So, it is reasoned, utilities do not need a tax incentive to do that which they are already obliged to do. On two previous occasions, however, Congress has included public utilities in legislation designed to stimulate plant construction and expansion by use of tax incentives. In the past this was done by liberalized depreciation and accelerated depreciation deductions. (Unfortunately, in some states regulatory agencies by interpretation deprived many utilities of these benefits.)

The President's tax blueprints also call for taxation of cooperatives (although he didn't say if they should be taxed on the same basis as the companies with which they compete). He did say that "the exemption for rural electric cooperatives and credit unions should be continued." Presumably, he would also exempt REA rural telephone co-ops. Perhaps Congress will correct

some of the tax inequities which grow out of the exempt status of cooperatives. Do not hope for too much here, however, as the co-op lobby is the strongest in Washington and they have some powerful new allies in the Executive Branch.

The Kennedy proposal to repeal the $50 dividend exemption, 4 per cent income tax credit on dividends, and the withholding of 20 per cent tax on dividends and interest payments, would hit telephone companies particularly hard. These restrictions would tend to discourage small investors, the backbone of many telephone companies.

The plan to extend the 52 per cent corporation tax (instead of letting it drop to 47 per cent) would hurt telephone companies along with everyone else in the corporate business community. Some experts feel that lowering the corporate tax would stimulate more investment and expansion than the complicated "tax incentive" gimmicks.

In any event, the House Ways and Means Committee will take up their drudging work again in January.

Ray Blain, TELEPHONY's technical editorial director, poses with mounted plated pole climber hooks, presented to him at a surprise party arranged by friends in the U. S. Army Signal Corps and telephone industry upon his recent retirement from the Signal Corps after 43 years of service. The plate on the board carried this inscription: *"To Ray Blain, Tempus Fugit, from Your Old Friends, August 25, 1961."*

New Welch Book Out

A new book important to the utility industry has just been published by Public Utilities Reports, Inc., of Washington, D. C.

"Cases and Text on Public Utility Regulation" was written by Francis X. Welch who until recently filled these very pages with his wit and wisdom. Mr. Welch has produced a highly readable volume about some highly complicated matters. The text interprets and evaluates key cases, setting them in proper perspective and significance in the field of utility regulation. The book's 15 chapter headings give an indication of its scope: The Public Utility Status; The Utility's Right to Serve; The Utility's Duty to Serve—Service Discrimination; Failure, Refusal, Abandonment, and Discontinuance of Service; The Requirement of a Reasonable Rate; The Basis of a Reasonable Rate; Valuation: Relative Weight of the Measures of Value; Valuation: Property Used and Useful —Tangibles and Intangibles; Depreciation and Operating Expenses; The Return Allowance; Methods of Rate Fixing—Rate Discrimination; Jurisdiction, Powers, and Duties of the Commissions; Pleadings, Evidence, and Procedure in Regulatory Proceedings; Financial Regulation—Holding Companies; Government Ownership—Cooperatives—Taxation—Atomic Energy.

Professor Welch will, we assume, use the new book in his courses in Public Utility Regulation at Georgetown University Law School, but we predict that it will find a far broader market than in the law schools. The practicing attorney, the accountant, the engineer, the financial expert, the public relations man, the regulatory staff consultant and the top executives of utilities and their assistants, all of whom share a responsibility for seeing that the operations of utilities are in conformity with regulatory requirements, will find in this volume a rich vein of valuable information. The Welch book gives each of these persons a common denominator, an outline of the over-all regulatory process so that they each may understand how his work and the work of his teammates fit into the composite picture.

Written in the same inimitable style which TELEPHONY readers enjoyed for over 25 years, this very interesting book translates complex abstractions into easily understandable realities. Readers will want to consume the book from cover to cover, and then place it near their desks for ready reference. An excellent table of contents with succinct subheadings and a comprehensive index will make the book invaluable as an everyday tool. This book may be ordered from TELEPHONY.

TV Laughs at Minow

One tool for whittling away opposition is to get others to laugh at it. The technique is to convince the public that the matter is all rather ridiculous and shouldn't be taken seriously.

Sometime ago the broadcasters took aim on FCC Chairman Newton Minow in their effort to defeat the original FCC reorganization plan and now it looks as if some of TV's professional funny men have been turned loose on him.

Maybe it's unconscious and coincidental, but the barrage of jokes aimed on television at the FCC chairman these days makes it appear that television gagwriters are training heavy artillery on the outspoken TV critic. Minow has some ideas about the quality of TV fare which, by the way, are shared by an army of viewers.

On Aug. 9, the big NBC hour-long spectacular sponsored by the United States Brewers Foundation saw the FCC boss buffooned about by such heavyweights as Jimmy Durante, Bob Hope and Gary Moore. At the opening of the show Jimmy Durante said, "The next hour will be devoted to uplifting the quality of television. If Mr. Newton Minow is listening . . . at least, Newt, we're trying." Later Durante, after returning from an unsuccessful attempt to pick up a girl on a beach, said, "I don't think it's right, fellows. After all, we're married. What would Mr. Minow say?"

Minow has referred to television as a "vast wasteland." Bob Hope turned the phrase for another joke. Pointing to a very fat elevator operator who

(Continued on page 34)

Joint Telephone and Power Buried Construction

By RAY BLAIN

Part 2

THIS IS Part II of a series of three articles. The preceding article was published in the Sept. 9 issue and the third and last installment will appear in the Sept. 23 issue.

* * *

Unit No. 1 Installation (See *Fig. 1* in Part I). Data on the previous unit installed in this sub-division are included in this article for comparative purposes. This unit had power and telephone cables installed in separate trenches to conform with previously established separation policies. The plan for this installation is shown in *Fig. 10*. The trenching for power cables was handled by the subdivider. The telephone company accomplished its own trenching under Option No. 3 of their standard policy (See Part I).

Unit No. 2 Installation. The first common trench for this trial installation was opened by the telephone company using an Auburn trencher mounted on an International Harvester I-340 tractor (See *Fig. 11*). A trench, 6 inches wide and 36 inches deep, with some unavoidable variation, was opened 3 feet from the rear property line. This trench occupied one 5-foot section of the 10-foot utility easement. The power company's cables, both primary and secondary, were placed in the bottom of the trench (See *Fig. 12*). One foot of backfill was then raked into the trench by power company workmen to provide the required separation between the power and telephone cables. The telephone company then placed its cable at the 2-foot level and completed the backfilling (See *Fig. 13*). *Fig. 14* shows in detail the arrangement of this installation.

This was the first job in which the primary and secondary power cables

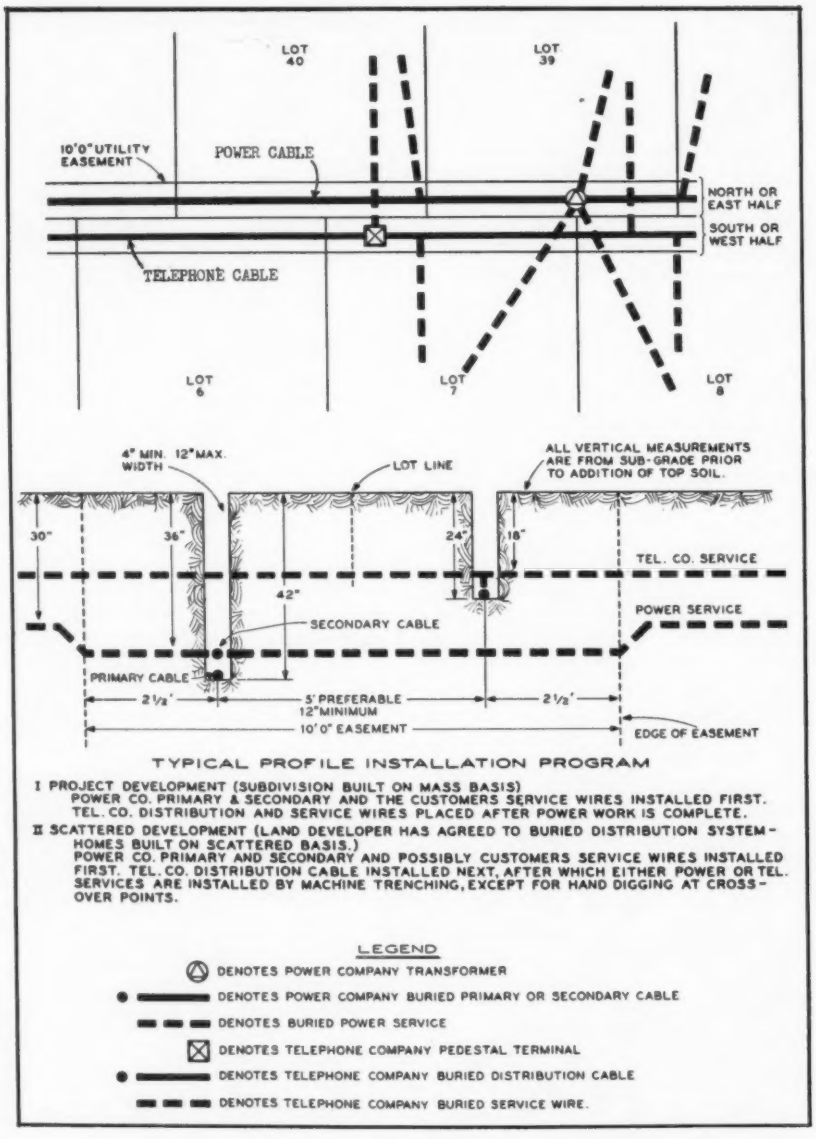

LOT 40
LOT 39
10'0" UTILITY EASEMENT
POWER CABLE
NORTH OR EAST HALF
SOUTH OR WEST HALF
TELEPHONE CABLE
LOT 6
LOT 7
LOT 8
4" MIN. 12" MAX. WIDTH
LOT LINE
ALL VERTICAL MEASUREMENTS ARE FROM SUB-GRADE PRIOR TO ADDITION OF TOP SOIL.
30"
36"
24"
18"
42"
TEL. CO. SERVICE
POWER SERVICE
SECONDARY CABLE
PRIMARY CABLE
2½'
5' PREFERABLE 12" MINIMUM
2½'
10'0" EASEMENT
EDGE OF EASEMENT
TYPICAL PROFILE INSTALLATION PROGRAM
I PROJECT DEVELOPMENT (SUBDIVISION BUILT ON MASS BASIS)
POWER CO. PRIMARY & SECONDARY AND THE CUSTOMERS SERVICE WIRES INSTALLED FIRST.
TEL. CO. DISTRIBUTION AND SERVICE WIRES PLACED AFTER POWER WORK IS COMPLETE.
II SCATTERED DEVELOPMENT (LAND DEVELOPER HAS AGREED TO BURIED DISTRIBUTION SYSTEM - HOMES BUILT ON SCATTERED BASIS.)
POWER CO. PRIMARY AND SECONDARY AND POSSIBLY CUSTOMERS SERVICE WIRES INSTALLED FIRST. TEL. CO. DISTRIBUTION CABLE INSTALLED NEXT, AFTER WHICH EITHER POWER OR TEL. SERVICES ARE INSTALLED BY MACHINE TRENCHING, EXCEPT FOR HAND DIGGING AT CROSS-OVER POINTS.
LEGEND
DENOTES POWER COMPANY TRANSFORMER
DENOTES POWER COMPANY BURIED PRIMARY OR SECONDARY CABLE
DENOTES BURIED POWER SERVICE
DENOTES TELEPHONE COMPANY PEDESTAL TERMINAL
DENOTES TELEPHONE COMPANY BURIED DISTRIBUTION CABLE
DENOTES TELEPHONE COMPANY BURIED SERVICE WIRE.

Fig. 10

Fig. 11. Auburn trencher on International Harvester I-340 tractor used by Illinois Bell.

Fig. 12. Power primary and secondary cables with random separation at bottom of 36-inch trench.

Fig. 13. Telephone cable at 24-inch level with 12 inches of backfill over power cables.

were installed together. On previous jobs, a 6-inch separation was maintained with the secondary at the higher level as indicated in *Fig. 10.*

The precast concrete pads to support the power transformers were placed across the trench, and the power cables brought up through the center opening as indicated in *Fig. 15* (See p. 22). A 12-inch earth separation of the power and telephone cables was maintained at the pads by trenching around them for the telephone cables. This arrangement is also shown in *Fig. 15.* The required separation at the service pedestal was maintained by offsetting both power and telephone pedestals 12 inches from the main trench. This arrangement is shown in *Fig. 16.* Pedestals were installed for the connection of all telephone services and for all power services except those to be connected directly to the transformers.

The sheaths of the telephone cables were bonded to the power neutral at each transformer by the use of a No. 6 ground wire, placed in the common trench. The connections were made at each transformer by power company employes and bonded to the aluminum sheath of the telephone cable at the pedestal terminals by telephone company employes. This bonding procedure will be adopted as standard on all future joint underground installations.

This first trial installation emphasized the importance of proper coordination of the planning and construction aspects of the job. An agreement must be made as to the starting times, rate of progress anticipated, and materials must be delivered on the job as and when required. It is also most important that all final grades be established prior to starting the job. Cables must be placed in rapid succession behind the trencher as shown in *Fig. 17* (See p. 23). With cable placing and backfilling operations keeping abreast of the trenching, only a minimum length of trench will be open at any one time. The entire progress of the installation job is paced by the speed of the trencher.

In an effort to overcome some of the problems encountered in the placement of transformer pads, the power company conducted some experiments in their Technical Center yard at Maywood, Ill. An effort was also made to improve the power service connection practices. The highly successful system that was employed in Unit No. 3 was developed from this experiment.

Unit No. 3 Installation. The trench for this unit was dug by the power company, first with a Buckeye trencher *(Fig. 18)* and later with an Auburn. This trench was 6 inches wide and 36 inches deep, the same as in Unit No. 2. The trench was centered in one 5-foot strip of the 10-foot utility easement. This installation was made as indicated in *Fig. 19.* The transformer pad was placed with the slotted side at the edge of the trench. Then, slots were provided

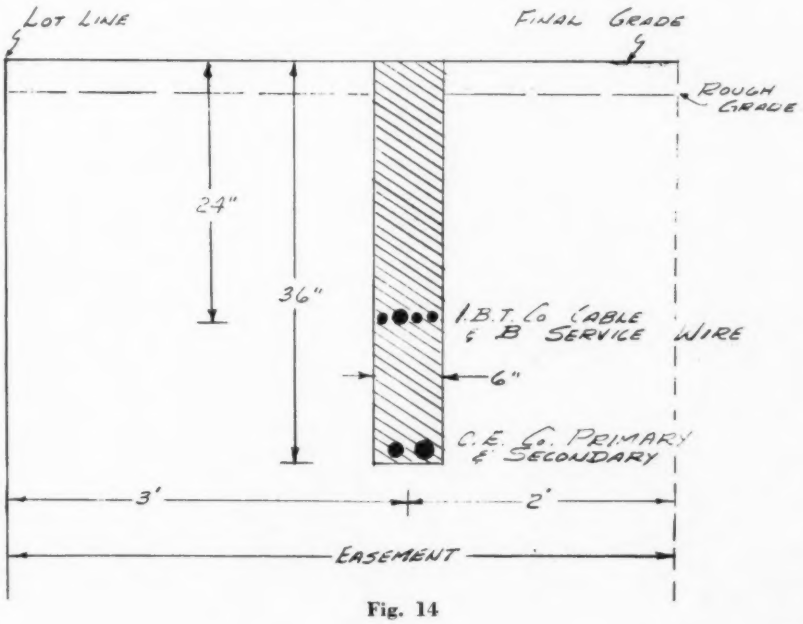


Fig. 14

in the side of the trench to bring the cables up through the pad opening in such a manner as to maintain the 12-inch separation (See *Fig. 20*). This method permitted the pad to be installed on undisturbed earth which provided greater stability. It also eliminated the by-pass trenching. As in the previous unit, the service pedestals for both telephone and power were offset 12 inches from the main trench to provide required seperation. (See *Fig. 16*).

In this unit, pedestals were also provided for all power service connections. A service pedestal was located adjacent to each transformer installation. The Maywood experiments demonstrated the advantage of having this pedestal connected directly to the secondary side of the transformer. This practice also eliminated the necessity of digging under and around the transformer to make service connections. It also proved a real economy when connections must be made at a later date.

Two additional types of bundled power secondary cables were used experimentally on this job—one a triplex, shown in *Fig. 4*, and a unit type, shown in *Fig. 5* (See Part I). These cables did not prove as satisfactory from an over-all cost and workability standpoint as the ribbon type previously described. Planning and coordination were excellent on this installation. There was very little, if any, lost motion on the job. Primary and secondary cables were placed in the trench immediately behind the trencher. The 12-inch backfill was immediately raked in by the telephone company's workmen. Telephone cable and service wires were then placed. Power company employes followed with the complete backfill operations. Seldom was there over 100 feet of trench open at any one time. Other workmen were kept busy placing pedestals and making terminations concurrent with this work. On the last working day of this job approximately 2,000 feet of trench was opened, the power and telephone cables, and service pedestals placed and backfilling operations completed.

Cost analysis of the Commonwealth Edison's portion of the project. The following tabulation compares the cost per lot served for the three units of the Hasbrook Sub-division in Arlington Heights, Ill., as previously described (See *Fig. 1* in Part I):

	Unit No. 1	*Unit No. 2*	*Unit No. 3*
Trench and backfill by	Subdivider	Ill. Bell	Commonwealth
No. of lots served	83	59	99
Material cost	$9,453.61	$6,474.79	$11,497.24
Material cost/10t	114.00	110.00	116.00
Labor and trans. cost, incl. cr. and debit Jt. billing 15 ft.	$6,166.44	$3,331.23	$ 4,731.35
Labor and trans. cost/lot	74.00	56.60	48.00
Total cost/lot	188.00	166.60	164.00

Unit service connection costs are not included, since a complete analysis is not yet available; however, it is expected that by the use of service pedestals these costs will be less than those previously experienced and at least comparable with the best coordinated jobs where the services were tied directly to the secondaries at the time of the secondary installations, or under $20 per unit. In general, the conditions encountered on these three jobs were so similar that the cost comparisons reflected changes in work methods only. The costs comparisons of materials indicate close coordination of the three jobs. Some difference is to be expected because of variations in area layouts which influence the number of transformer installations required and the number of customers that can be served from each installation.

The material costs on Unit No. 3 were influenced by the higher cost of experimental power secondary cables

(Continued on page 32)

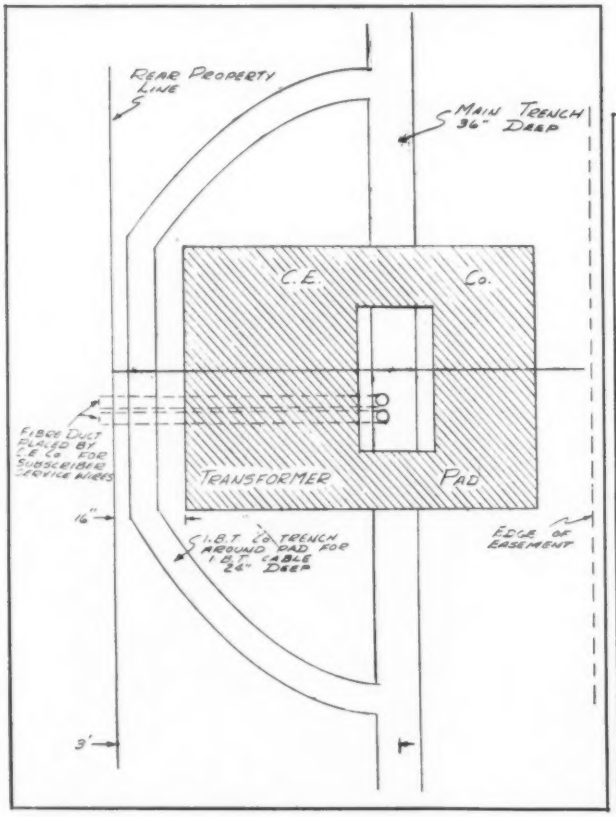

REAR PROPERTY LINE
MAIN TRENCH 36" DEEP
C.E. Co.
FIBRE DUCT PLACED BY C.E. Co. FOR SUBSCRIBER SERVICE WIRES
TRANSFORMER PAD
16"
I.B.T. Co. TRENCH AROUND PAD FOR I.B.T. CABLE 24" DEEP
EDGE OF EASEMENT
3'

Fig. 15

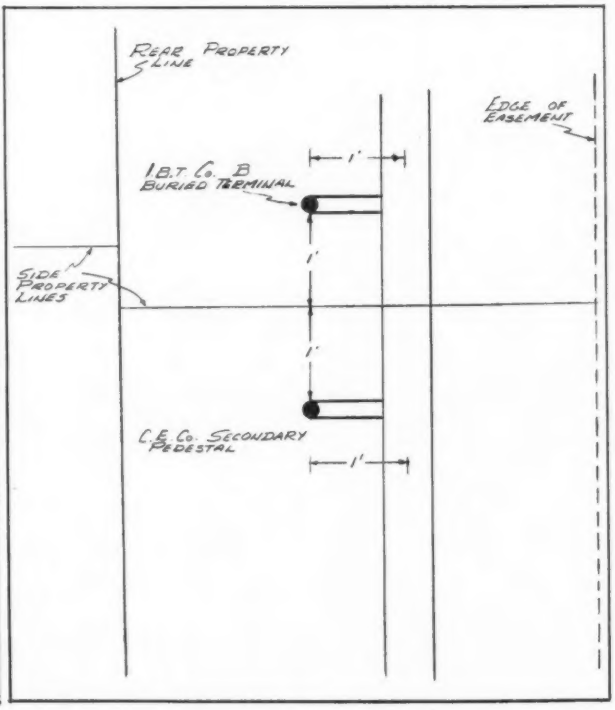
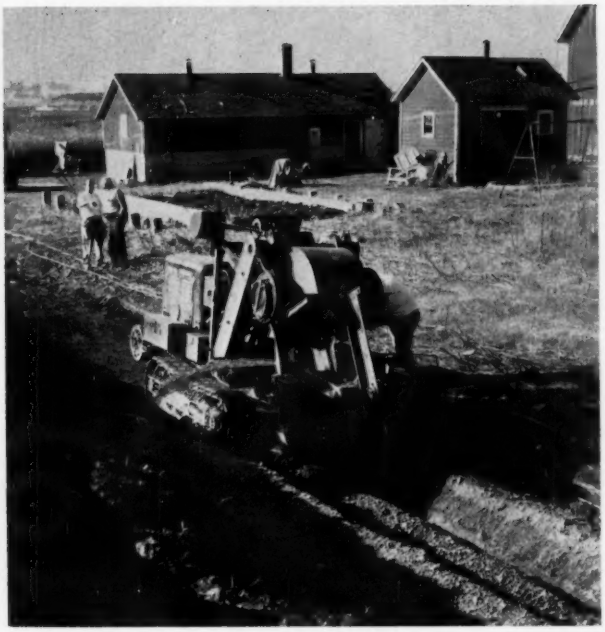


Fig. 16



Left: Fig. 17. Operation showing layout of cables of both utilities with intermediate backfilling operation close behind the trencher. Right: Fig. 18. Buckeye trencher used by Commonwealth Edison Co.

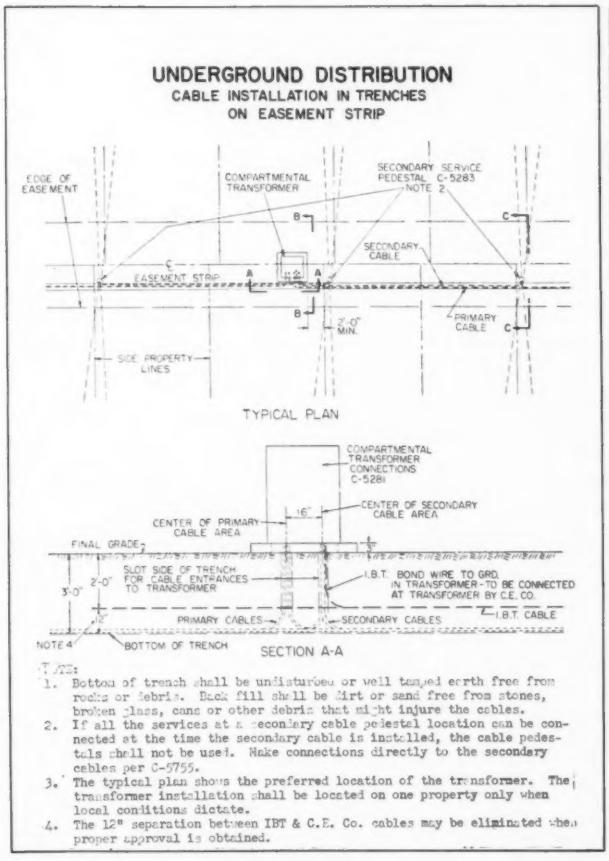

UNDERGROUND DISTRIBUTION
CABLE INSTALLATION IN TRENCHES
ON EASEMENT STRIP
EDGE OF EASEMENT
COMPARTMENTAL TRANSFORMER
SECONDARY SERVICE PEDESTAL C-5283 NOTE 2
SECONDARY CABLE
EASEMENT STRIP
2'-0" MIN.
PRIMARY CABLE
SIDE PROPERTY LINES
TYPICAL PLAN
COMPARTMENTAL TRANSFORMER CONNECTIONS C-5281
CENTER OF PRIMARY CABLE AREA
CENTER OF SECONDARY CABLE AREA
FINAL GRADE
SLOT SIDE OF TRENCH FOR CABLE ENTRANCES TO TRANSFORMER
I.B.T. BOND WIRE TO GRD. IN TRANSFORMER - TO BE CONNECTED AT TRANSFORMER BY C.E. CO.
PRIMARY CABLES
SECONDARY CABLES
I.B.T. CABLE
NOTE 4
BOTTOM OF TRENCH
SECTION A-A
NOTES:
1. Bottom of trench shall be undisturbed or well tamped earth free from rocks or debris. Back fill shall be dirt or sand free from stones, broken glass, cans or other debris that might injure the cables.
2. If all the services at a secondary cable pedestal location can be connected at the time the secondary cable is installed, the cable pedestals shall not be used. Make connections directly to the secondary cables per C-5755.
3. The typical plan shows the preferred location of the transformer. The transformer installation shall be located on one property only when local conditions dictate.
4. The 12" separation between IBT & C.E. Co. cables may be eliminated when proper approval is obtained.

Fig. 19

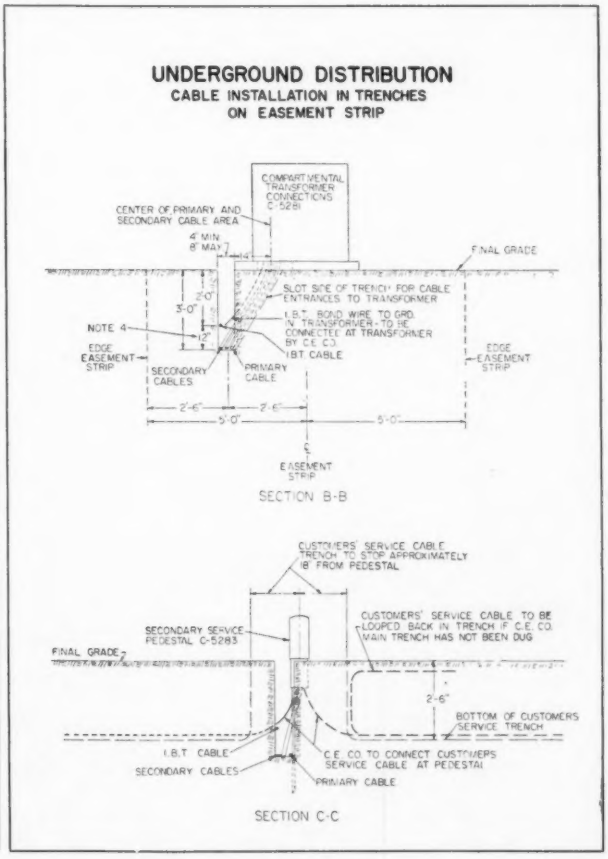

UNDERGROUND DISTRIBUTION
CABLE INSTALLATION IN TRENCHES
ON EASEMENT STRIP
COMPARTMENTAL TRANSFORMER CONNECTIONS C-5281
CENTER OF PRIMARY AND SECONDARY CABLE AREA
4' MIN. 8' MAX.
FINAL GRADE
SLOT SIDE OF TRENCH FOR CABLE ENTRANCES TO TRANSFORMER
I.B.T. BOND WIRE TO GRD. IN TRANSFORMER - TO BE CONNECTED AT TRANSFORMER BY C.E. CO.
I.B.T. CABLE
NOTE 4
EDGE EASEMENT STRIP
SECONDARY CABLES
PRIMARY CABLE
EDGE EASEMENT STRIP
2'-6"
5'-0"
2'-6"
5'-0"
EASEMENT STRIP
SECTION B-B
CUSTOMERS' SERVICE CABLE TRENCH TO STOP APPROXIMATELY 18' FROM PEDESTAL
CUSTOMERS' SERVICE CABLE TO BE LOOPED BACK IN TRENCH IF C.E. CO. MAIN TRENCH HAS NOT BEEN DUG
SECONDARY SERVICE PEDESTAL C-5283
FINAL GRADE
2'-6"
BOTTOM OF CUSTOMERS SERVICE TRENCH
I.B.T. CABLE
SECONDARY CABLES
C.E. CO. TO CONNECT CUSTOMERS SERVICE CABLE AT PEDESTAL
PRIMARY CABLE
SECTION C-C

Fig. 20

The Plant Man's NOTEBOOK

By RAY BLAIN, Technical Editorial Director

WE HAVE A LETTER from a telephone contractor which we quote in full as follows:

"I read your article on complaints against contractors excavating near telephone cables. It seems inconceivable to me that a reputable contractor would deliberately dig through a *known* cable, insurance notwithstanding.

"I would hazard a guess that either the contractor has not been given accurate information on the location of the cable or that the telephone company has not chosen its contractor properly.

"In these days of rising costs, it is a real temptation to buy according to price only. However, I trust you'll find that the utilities which recognize that quality installation is the largest single factor in keeping maintenance costs at a minimum, do not run into the troubles you cite."

To all this, we most heartily agree. This is a reliable contractor with a good reputation, and we are certain that he would never cut an underground cable intentionally. It appears, however, that in certain sections of the country, some contractors are not so ethical.

In this connection, we had a letter from one reader who stated that they furnish contractors with maps indicating the exact location of cables. Then the contractor later ignores the drawings and runs his ditcher through the cables. He has insurance covering such items and it is cheaper to use this method than hand digging around the telephone cables.

Whenever contractors of this caliber operate in an area, perhaps the best practice is for the telephone company to have a representative on the job at all times to protect its underground facilities, and make certain that contractors do not cut the cables, insurance or not.

•

It is rather surprising to learn that some cable splicers continue to boil out paper-insulated cable with paraffin when desiccant will definitely prove more efficient and convenient to use. Moreover, paraffin tends to obstruct the flow of dry air when cable is pressurized.

Certainly, all paper-insulated cable should be pressurized today.

•

We visited an office recently that had just been rebuilt and was most attractive. The walls were panelled with marlite and Celotex. Acoustical ceiling tile and wall-to-wall carpet completed the picture. Also, the light and power wirings were concealed, as is the common practice.

Then, the telephone company's installers ran a plastic cable around the baseboard. Later on, two smaller plastic cables were added to the run to accommodate some key sets that were being installed. These installers were good workmen and made as neat a job as possible, but even so, it practically ruined the appearance of the office.

We have never been able to understand why the concealment of power wires is taken for granted, but seldom is an effort made to conceal telephone wiring.

•

The writer has attended many a cut-over down through the years, and has always found them fascinating. First, we had the conversion from magneto to common battery, and later from common battery to dial.

There is always something rather sad in seeing an old switchboard idle after it has been busy for many years. At the same time, it is most exciting to hear a new dial system come to life after a cut-over. It will start with a few relay clicks, and increase to a clatter as the traffic load builds up.

•

There is every indication that the cord-type switchboard may soon be a thing of the past. With modern dial switching systems, even on a PBX, adequate operator's assistance can be provided by a cordless-type switchboard.

This new board is neat, requires less space, and in all probability, can furnish a better grade of service than a cord-type board.

•

In certain mountainous sections of California, wells are drilled on the horizontal. These wells, drilled on a slightly upward angle, permit the water to flow out of the well opening, and thereby save the cost of pumping.

•

Recently we enjoyed a visit with T. Allen Pelsue and Lester F. Dunham of the Morrison-Pelsue Co., Denver. They demonstrated one of their ventilating heaters. This heater provides a constant supply of fresh air, or fresh-heated air, to ventilate manholes and prevent accidents caused by explosions or oxygen deficiencies. This particular model of heater has an 800-watt ac generator to provide the required lighting on the job.

•

A recently developed device called the "Voiceplex" permits the transmission of two voice channels in a 3 kc bandwidth.

This system is based on a slow-time division multiplex technique for transmitting and sequentially sampling two separate voice channels; Channel A is sampled for 1/90th of a second; and Channel B, the next 1/90th of a second. The signal thus produced is of rather low quality, but word intelligibility is approximately 90 per cent, and sentence intelligibility is close to 100 per cent.

The "Voiceplex" may be used on land-line telephones, radio circuits, VHF links, scatter relays, or any other type of facility employing low signal quality, high intelligibility voice communications. The total spectrum requirements are only 300 to 3,000 cps.

"Cross Talk"

An optimist is described as a suburbanite who thinks that the birds in his cherry trees are eating worms.

Courts and Commissions

Kan. Court Clears Way for Sale of Cooperative

Kansas District Judge R. W. Hemphill on Aug. 24 ruled invalid a restraining order preventing Rural Telephone Service Co., Lenora, from collecting for service at three exchanges formerly served by Farmers Cooperative Telephone Co., Oberlin (TELEPHONY, Dec. 24, 1960). Exchanges involved are Jennings, Lund and Kanona.

Judge Hemphill's action came in a legal battle in which certain stockholders of the Farmers company are protesting the sale of the company to the Rural Service company.

The judge also denied a motion for a new trial in the district court of appeals from rulings of the Kansas Corporation Commission, which had ordered the Farmers Cooperative to cease operations.

He also ruled on the outcome of a supervised election of directors of the Farmers cooperative. Legal directors, according to Judge Hemphill, are those who favor sale of the company to Rural Telephone.

Those who oppose the sale have filed a $60,500 damage suit against former directors of the Farmers company, charging them with conspiracy to wreck the company.

Raises to Cover Increased Wages Approved in Minn.

The Minnesota Railroad & Warehouse Commission on Aug. 28 gave three companies permission to increase rates to offset the effect of the 1961 amendment to the federal Fair Labor Standards Act. The commission had authorized these applications in its directive of July 10. The companies involved are:

Redwood County Telephone Co., Redwood Falls, which was granted permission to raise rates by $18,607.

The company serves 1,342 local and 916 rural stations through exchanges at Belview, Vesta, Echo, Wood Lake, Wabasso, Morgan and Walnut Grove. It also serves the rural area adjacent to Red Wood Falls.

It is estimated that the wage increases will raise the company's expenses by $18,422.

The approved increase in rates will give the company a $21,642 net income, allowing it a 4.50 per cent rate of return on its $480,628 rate base instead of the .92 per cent which would be earned under old rates.

•

Wikstrom Telephone Co., Inc., Karlstad, was allowed an increase of $16,816, partially offsetting its $20,269 increase in expenses.

The company has dial exchanges at Karlstad, Donaldson, Strandquist, Halma, Greenbush and Viking and manual exchanges at Newfolden, Lancaster and Lake Bronson, serving 775 local, 797 rural and 59 service stations.

With new rates, net income will rise to $17,405, giving the company a 1.98 per cent rate of return on its $876,178 rate base, instead of the .11 per cent which would be earned under old rates.

•

The G. O. Miller Telephone Co., Goodhue, was allowed to increase rates by $4,774, offsetting wage increases of $4,337.

The company serves 209 local and 673 rural stations through exchanges at Goodhue, White Rock and Bellechester.

Net income with new rates will become $8,150, giving the company a 3.58 per cent rate of return on its $227,634 rate base, instead of the 1.56 per cent return realized under old rates.

Reject Ida. Company's Rate Schedule, Order New Rates

The Idaho Public Utilities Commission has rejected a rate schedule submitted by the Gem State Telephone Co., McCall. The company was ordered to draw up a new schedule.

It serves subscribers in the Cascade, Donnelly, McCall, New Meadows and Riggins areas.

The new rates are to incorporate a commission-approved increase in annual revenues of $36,000. The commission says the new rates are necessary to take into account reduced losses on uncollected bills and savings resulting from the closure of the company's Cascade office and transfer of that office's operations to McCall.

The company has been granted an $842,000 loan by the Rural Electrification Administration. This, the commission said, created increased costs from taxes, depreciation and the interest on the loan.

Gamblers To Lose Telephone Service in Ky. PSC Order

An order designed to cut off telephone service to bookmakers and other known gamblers has been issued by the Kentucky Public Service Commission.

In an emergency regulation approved by Governor Combs, the commission ordered telephone companies under its jurisdiction to discontinue or refuse service to any customer when:

Notified in writing by the commission that the telephone service is being used—or will be used—for transmitting or receiving gambling information; so notified by a federal or state law enforcement agency; so notified by the Kentucky state attorney general; or so notified by any commonwealth's attorney or county attorney acting within his jurisdiction.

The order provides that a telephone company, upon receipt of such notification, shall after reasonable notice to the subscriber, discontinue or refuse the leasing, furnishing or maintaining of service.

However, the commission's order added that "no damages, penalty, or forfeiture, civil or criminal, shall be found against any telephone utility for any act done in compliance with any notice received from the commission or law enforcement agency."

"Nothing in this section," the order added, "shall be deemed to prejudice the right of any person affected thereby to secure an appropriate judicial determination that such facility should not be discontinued or removed, or should be restored."

Under Kentucky law, every telephone

utility under the commission's control must furnish to the commission on its demand any records or information it may have that will assist the commission in enforcing the anti-gambling rule.

The order expressly exempts the transmission of information for use in legitimate news reporting of sporting events or contests by recognized news media.

Minn. Company Gets OK To Add Surcharge for EAS

Anoka County Telephone Co., Bethel, on Aug. 28 was given permission by the Minnesota Railroad & Warehouse Commission to add a surcharge to dial rates for the provision of extended area service.

The company, which serves 40 local and 690 rural stations, surveyed subscribers in its Soderville exchange area. It found that 70.9 per cent favored extended area service to Minneapolis and Anoka. It plans to put this EAS into operation about May 1, 1962.

The company is also extending dial service from its Soderville exchange to its magneto exchange at Bethel and will replace rural multi-party service now offered at Bethel with four-party service from Soderville for those who desire it.

Under the approved rates, the company will have a net income of $17,-173, giving it a 4.64 per cent rate of return on its $369,939 rate base.

Under old rates the company would have realized a loss of $4,013.

Present dial rates and rates including the surcharge for EAS are as follows:

	Present	*Including Surcharge*
One-party business..	$8.60	$20.00
Two-party business..	7.50	12.00
Four-party business (Bethel local service area only).	6.00*	20.00*
Multi-party rural service.....	6.00	8.50
One-party residence..	5.00	9.50
Two-party residence .	—	7.75
Four-party residence.	3.75	6.00
Four-party residence (Bethel, local service area only).	3.75*	9.50*
Multi-party rural residence ...	4.25	6.50

*The company plans to discontinue the Bethel exchange upon completion of its full dial conversion program. All Bethel subscribers would be served from the dial exchange at Soderville. Graded service limited to four-party service would be provided in the Bethel local base rate area at the rates shown.

Representatives of state development agencies, chambers of commerce, and industry from Ohio, Indiana, Illinois, Michigan and Wisconsin recently met with civilian and military officials of the federal government in Columbus, O., to lay plans for a Central States Exhibit of Business Opportunities to be held in Columbus on Oct. 24, 25 and 26.

Koder M. Collison, director of the Ohio Department of Industrial & Economic Development and chairman of the planning meeting, outlined purposes of the exhibit: to give smaller business firms an opportunity to learn how they can participate in the federal government procurement program; to aid the federal military and non-military agencies in their procurement programs; and to give prime contractors an opportunity to learn of potential suppliers.

Industrial development representatives from Ohio utilities participating in the planning meeting were (left to right, seated): W. W. Welch, Columbus & Southern Ohio Electric Co.; Richard S. Zachman, General Telephone Co. of Ohio; Andrew Sorenson, Ohio Rural Electric Corp. Standing: Robert H. Kranz, Cincinnati Gas & Electric Co.; K. W. Barkhauser, Cleveland Electric Illuminating Co.; Robert Rine, Ohio Power Co., and R. D. Best, Ohio Edison Co.

Independent Telephone Corp. Announces New Acquisition

Acquisition of a controlling interest in Western Carolina Telephone Co., Weaverville, N. C., has been announced by William B. Harrison, president, Independent Telephone Corp. of Dryden, N. Y. The Western Carolina company serves more than 17,000 stations in North Carolina and Georgia.

The Independent Telephone system heretofore has comprised 14 subsidiary companies operating in the states of Florida, Michigan, Missouri, New Jersey, New York and West Virginia.

Seeks Dissolution in Neb.

The Nebraska Railway Commission on Sept. 6 was to have heard the application of the Hazard Telephone Co. to abandon the company's exchange area. Approximately 70 subscribers would be affected by the proposed discontinuance of service.

U. S. House Passes Bill Outlawing Use of Slugs

Use of slugs in telephones, parking meters, fare boxes or vending machines would become a federal offense under terms of a bill passed by the House of Representatives on Sept. 6 (TELEPHONY, Aug. 5).

Penalties provided for in the bill range as high as a $1,000 fine and a year in jail.

At hearings on the provision, the United States Independent Telephone Association had estimated that Independent companies lose about $100,000 yearly because of the use of slugs. The Bell System estimates its slug losses at $800,000.

Asks to Buy S. D. Company

The Northwestern Bell Telephone Co. on Aug. 28 asked the Federal Communications Commission for permission to purchase the Cavour (S. D.) Telephone Co.

The Three S's

SAFETY–SERVICE–SALES

*By BEN SMITH**

IN A NUMBER of articles of mine that have appeared in TELEPHONY, I particularly emphasized the part that plant people play in selling. In the Apr. 1, 1961 issue, I outlined 10 steps to a sure fire plant sale. And, in other articles, such as the one in the Aug. 13, 1960 issue, through photographs, we indicated how plant men can make sales.

I received a great many comments and letters from people in the industry who wanted to use the sales ideas we presented. Many of them found ways to add to and change parts of the story and to improve their sales.

Recently, in working with some installers and repairmen, I was reminded of the part that safety plays in everything we do in plant and this has been ingrained into all the plant people. It occurred to me that the foundation for all our selling effort must be safety and that the success of selling itself is dependent on safety.

Then I was reminded that service has been ingrained in all of us and this, too, is another important part of the foundation for a good selling job.

Then I thought back to the time I was a small boy. I lived in Georgia, and each Spring young men were given a few doses of a medicine called 3 S's. I don't recall now what the 3 S's stood for, but it was a good tonic.

So it occurred to me that really we have 3 S's to better customer relations. Those 3 S's are *Safety*, *Service*, and *Sales*. And I began making an outline that could be used by our foremen or supervisors any place in talking with their people, and this worked out to 13 steps. It wasn't just happenstance that there were 13 steps, because some time ago a survey was made which indicated that out of every 100 visits, a plant man could make 13 sales of extensions and color.

And here are those 3 S's to better customer relations — *Safety*, *Service*, *Sales*.

(1) *Drive Safely.*
- (a) Practice being a safe driver.
- (b) A safe driver is never a tailgater.
- (c) A safe driver is always thinking of safety for others, as well as himself.
- (d) A safe driver keeps his eyes, ears, and mind open for traffic hazards.
- (e) A safe driver always looks and plans ahead.
- (f) A safe driver sets a good example for others.
- (g) A safe driver is always courteous and considerate.
- (h) Our customers always admire a courteous driver and speak favorably about the firm whose car he is driving. Customers are less likely to buy from a firm whose drivers are not safe and courteous.

(2) *Check Truck For Wall Sets And Color Sets.*
- (a) Always play it safe — have color with you.
- (b) Be sure you have your favorite color set before leaving the work center.
- (c) You can't sell 'em, if you don't have them to show.

(3) *Park Your Truck Safely*
- (a) Don't park on the opposite side of the street.
- (b) Don't park up or down the street.
- (c) Don't park in the customer's driveway.
- (d) Park on same side of street where the customer is located, preferably in front of his premises.
- (e) Park in plain sight of the house where customer can see the name of the company on the car door.

(4) *Read Service Order Or Trouble Ticket.*
- (a) Check address for house and street number. This is the "*safe*" thing to do.
- (b) Check the customer's name and the service wanted. Just play it safe—be sure you are at the correct address.
- (c) Decide what colors to take in.
- (d) Go straight to the front door of the house.

(5) *Knock On Door Lightly Or Ring Doorbell.*
- (a) Don't use screw driver to knock. Practice safety—customer will like you better.
- (b) Don't kick on door—knock with your hand.

(6) *Step Back Three Steps From Door.*
- (a) Play it safe. The customer may have an angry dog.
- (b) The customer wants to play it safe—doesn't like people who crowd door.
- (c) Be safe—know what to say when the customer comes to the door.

(7) *Introduce Yourself.*
- (a) By name, or "I'm your telephone service man and am here to install (or repair) your service."
- (b) "Are you Mrs. Jones?", or "Is this the Bill Jones residence?"

(8) *Ignore A "No"*
- (a) "I don't want a color set," or "We don't need an extension telephone." Don't argue —you can't win. Customers don't always mean what they say. Some people are testing you to see if you can convince them of something they should want.

(9) *Ask Questions.*
- (a) Best to ask questions like "Where do you want your telephones?", or "What room are you usually in when the telephone rings?", or "Where should your telephones be to save running to answer a call?"
- (b) Ask the customer: "What do you like about the wall set?"

(10) *Let Customer See A Wall Set Or Color Set*
- (a) Ask the customer if they have seen the new model telephone.
- (b) Ask him if you can put the color telephone on a table or stand. Better still, hand a color telephone to the customer.
- (c) Tell the customer the advantage of an extension in the bedroom or the kitchen.
- (d) Explain safety advantages. Save running to answer the telephone—protection.
- (e) You can't sell 'em if you don't have them to show.

(11) *Shut Up.*
- (a) Play it safe. Don't talk too much.
- (b) Let them see the color or wall telephone—answer questions.
- (c) Get set for the next step.

(Continued on page 30)

*Mr. Smith is General Merchandising Manager of Southwestern Bell Telephone Co., St. Louis, Mo.

AE provides business communications for large or small subscribers!

Let's take a look at two completely different commercial customers in your area. The farmer often wants an extension phone in the barn...so that he doesn't have to run back to the house for a call. For this customer, our Type 90 wall phone is ideal...

The large lumber yard, on the other hand, needs a complete communications system to handle incoming, outgoing and internal traffic. This customer needs a PABX system. AE gives you stock delivery on six PABX boards.

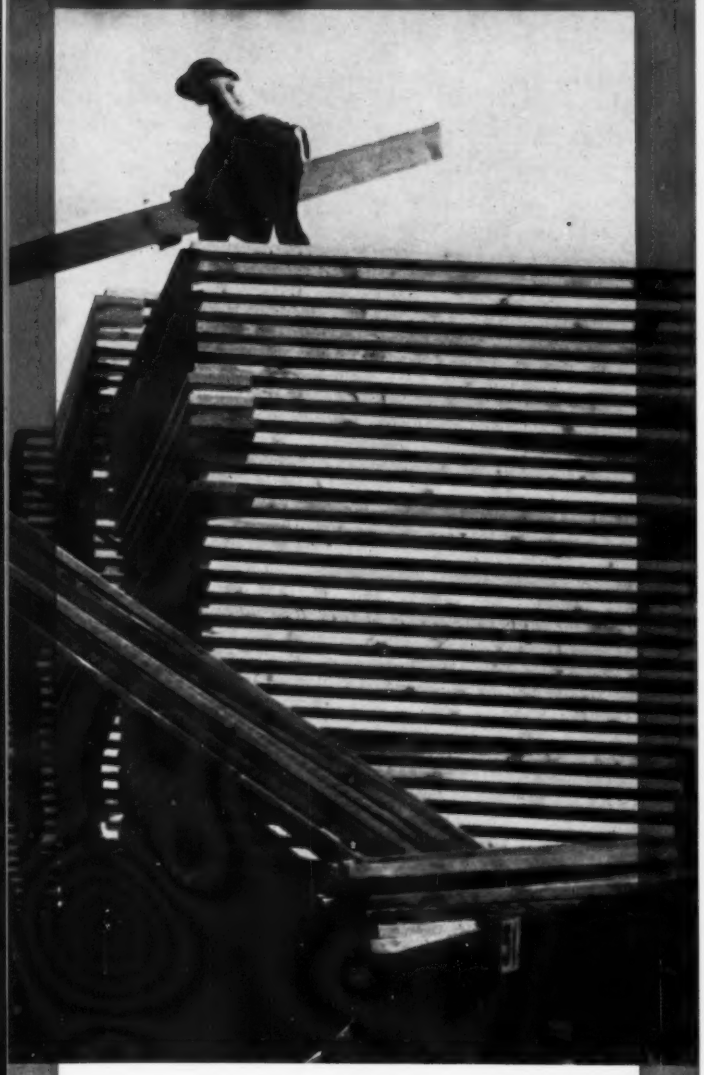
For details on our complete line of business phones, PABX and PBX boards and key systems, see your AE representative. He can also furnish you with valuable sales aids to help you promote business communications equipment. To contact him, just write Automatic Electric Sales Corporation, Northlake, Illinois.

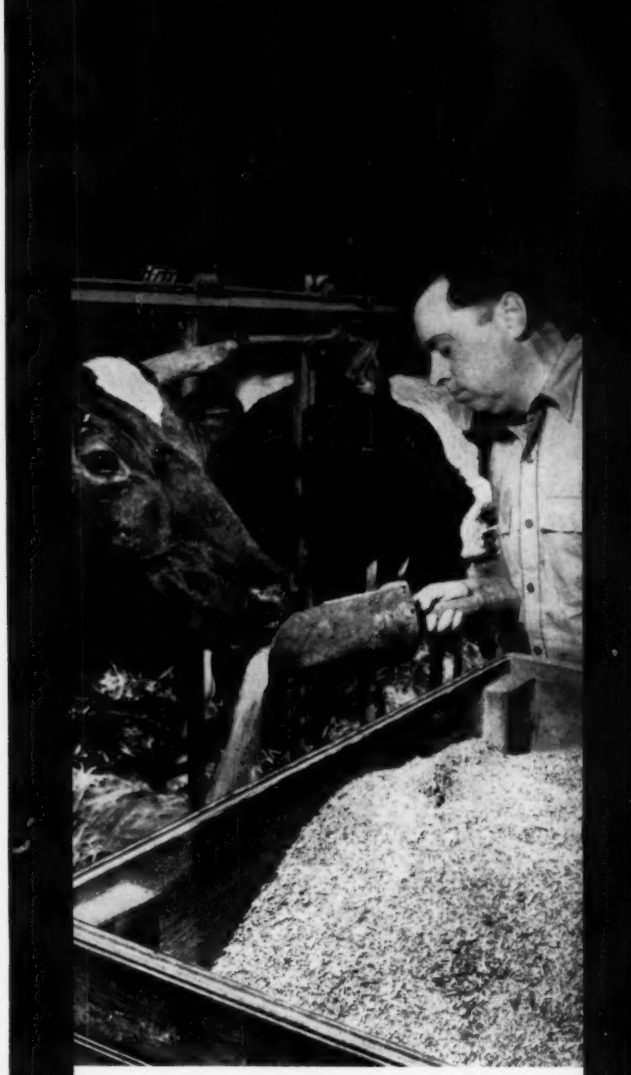
AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM





TYPE 33A6A PABX

A complete communications system for up to 20 phones. Handles up to four inside and five outside calls at once—using standard phones. Compact attendant cabinet (shown here).

TYPE 90 WALL PHONE

A space-saver with narrow profile design. Special-angle dial is easy to use. Side-mounted handset can't be brushed off hook. Simple installation and maintenance. Choice of 10 colors.

(12) *May I Make A Suggestion?*
- (a) Most people say "Yes" to this question.
- (b) Customers welcome suggestions—they think of you as an expert.
- (c) Ask them, "May I make a suggestion?"
- (d) Suggest the advantages an extension in the bedroom or the kitchen offers.
- (e) Suggest how much more color adds to their home—kitchen, bedroom, etc.
- (f) Suggest that "adequate" telephone service makes "you and your home more safe, saves steps, saves missed calls."

(13) *Thank You, Mrs. Jones.* (And after the *sale* is made to give *safer* better *service*).
- (a) "I know you will enjoy your telephone service."
- (b) "Thanks for letting me suggest our complete telephone service. If, at a later date, you decide to have the added advantages of this service, I would personally like to install it for you."

I have given you 13 tried-tested suggested steps to improve *Safety-Service-Sales.* The next step, *"TRY,"* is the one you add to make a success of the Safety-Service-Sales plan.

TRY. This is what you add to the 13 suggestions—"TRY." Very little can be accomplished without effort. So you will want to "try" on every visit—suggest extensions, color and compact telephones.

MST&T Vice Presidents

Kenneth P. Todd has been named vice president in charge of public affairs for the Mountain States Telephone & Telegraph Co., Andrew Horan, vice president for public relations has announced. Mr. Todd, whose appointment was effective Sept. 1, had been serving since 1952 as general manager for Mountain States in Montana. Prior to that he had been Denver district manager. George I. Redhair, assistant vice president for operations in the company's Denver general office, succeeds Todd as vice president and general manager for Montana.

Traffic Violations Serious

Studies compiled by The Travelers Insurance Cos. show that traffic violations can be blamed for 2,600,000 injuries and more than 30,000 deaths on our highways during 1960.

Too Many Teen Accidents

The record of drivers between the ages of 18-25 improved during 1960; but they still were involved in nearly 28 per cent of all fatal accidents—twice what their numbers would warrant.

Brooks Hays To Address USITA Convention

Brooks Hays, Assistant Secretary of State for Congressional Relations, will be one of the featured speakers at the annual convention of the United States Independent Telephone Association, to be held Oct. 9, 10 and 11 at the Conrad Hilton Hotel, Chicago.

BROOKS HAYS

Mr. Hays, who will speak on the subject, "Ozark Party Line," was born at London, Ark., on Aug. 9, 1898. He attended the University of Arkansas where he received his B. A. degree in 1919. Mr. Hays studied law at George Washington University and was awarded his LL.B. in 1922. He has been granted honorary degrees by several universities.

Following his graduation, Mr. Hays was admitted to the bar of the state of Arkansas and began the practice of law as a member of the Russellville, Ark., law firm of Hays, Priddy & Hays. He continued in private practice until his appointment as assistant attorney general of Arkansas in 1925. Two years later he returned to private practice in Little Rock, with the firm of Hays & Turner. He became a member of the Democratic National Committee in 1932 and retained the post until 1939.

In 1934, Mr. Hays was named legal advisor for Arkansas with the National Recovery Administration. In the following year he accepted a position with the Farm Security Administration. He resigned in 1942 to run for Congress. Elected as United States representative from the Fifth District of Arkansas, he remained in the Congress until 1959. Mr. Hays served as a member of the House Foreign Affairs Committee in the 82nd through the 85th Congresses. He was a member of the United States delegation attending the ceremonies incident to the inauguration of the President of Costa Rica in 1953, and a representative of the United States to the 10th session of the United Nations General Assembly in 1955.

Mr. Hays was appointed a member of the board of directors of the Tennessee Valley Authority in 1959. He retained that position until named to his present post.

IRE Group Sponsors Idea Communication Symposium

The Institute of Radio Engineers' Professional Group on Engineering, Writing and Speech (PGEWS) and the College of Engineering, Michigan State University will co-sponsor the National Symposium on Engineering, Writing and Speech.

Theme of this symposium will be "Communicating Ideas — the Modern Engineer's Function." Sessions will be held October 16 and 17, at the Kellogg Center for Continuing Education, Michigan State University, East Lansing.

Keynoter for the symposium will be Professor Dwight Gray. Frank Leamer, personnel director of Bell Telephone Laboratories, will be the dinner speaker while the luncheon meetings will hear Dean J. D. Ryder of Michigan State and W. L. Dunn, vice president of Admiral Corp.

Invited speakers include Miss Eleanor M. McElwee of RCA, David M. Davis of Wright-Patterson Air Force Base, B. F. Cheydleur of Philco, Dr. Richard Gerfen of Northwestern University, and Professor H. E. Koenig of the University of Michigan.

Inquiries regarding program, travel, and housing should be addressed to IRE-PGEWS, c/o Continuing Education Service, Michigan State University, East Lansing, Mich.

The Day's Work

"There is generally no such thing as duty to the people who do it. They simply take life as it comes, meeting, not shirking its demands, whether pleasant or unpleasant; and this is pretty much all there is of it."—GAIL HAMILTON.

In Command

"The really successful executive of the future will, above all, be a businessman and will be qualified in all phases of business. He will have at hand new technological tools for sampling, measuring, and indicating his operations. He can then be the master of the situation and not just part of the system."—MAURICE NELLES, *Vice president of engineering, American Electronics, Inc.*

There's no fine print in Onan's pricing policy!

'Strip-downs' and 'price-adders' are getting out of hand in the electric plant industry. There have always been a few who have sold strictly on price, and of course, got the price down by stripping equipment of essential components.

Today, some leading manufacturers are stripping-down their electric plants.

These stripped-down prices *are* attractive. But when you add the cost of such essentials as oil and water pressure gauges, battery-charging ammeter, over-speed shutdown, radio suppression, flexible exhaust tubing—*even mufflers!*—what happens to your bargain price? You're right—you wind up paying more.

Onan has never produced a stripped-down model, has never used essential operating accessories as 'price-adders.'

Today, more than ever, it will pay you to go over electric plant prices with an eagle eye. *Compare Onan prices with others before you buy.* (But read the fine print.)

C. W. Onan, President

Onan Electric Power Plants are available in sizes from 500 to 230,000 watts.

World's leading builder of electric power plants

ONAN Division, Studebaker-Packard Corporation, 2609 University Avenue S.E., Minneapolis 14, Minn.

JOINT BURIED CONSTRUCTION

Continued from page 23

used in part of the installation. There should be some reduction in this cost on future jobs.

The greatest cost variation was in unit labor costs which were reduced by 35 per cent on the last job as compared to previous practices. This considerable reduction was accomplished despite the contribution of labor for trenching and backfilling previously provided by the subdivider, and indicates the effectiveness of closer coordination of installation work accomplished by the joint operation with utility trenching and backfilling.

Labor and transportation costs were reduced from about 40 per cent of total costs on Unit No. 1 to about 30 per cent of total costs on Unit No. 3. In the last unit, material represented more than two thirds of the total cost. Overall costs were reduced approximately 13 per cent as compared to past practices.

Estimated cost of overhead construction to serve the three units, while less per customer than for underground, indicated a decreasing differential. This differential was $84 per lot in Unit No. 1; $75.50 per lot in Unit No. 2, and $48 for Unit No. 3. It is interesting to note that the total overhead estimates for Unit No. 3 per lot are equal to actual underground material charges on the same base, and that unit labor costs for underground are lower than those estimated for an overhead system. Overhead estimates were about equally divided between labor and material, as compared to 70 per cent material and 30 per cent labor on the last trial installation of underground. Total underground costs were about 40 per cent more than for overhead on this job.

Cost analysis of the Illinois Bell's portion of the project:

	Unit No. 1 Ill. Bell	*Unit No. 2** Ill. Bell	*Unit No. 3** Commonwealth
Trench and backfill by	(Separate)	(Common)	(Common)
No. of lots served	83	59	99
Material cost	$1,483.45	$1,155.25	$1,903.18
Material cost/lot	17.87	19.58	19.22
Labor and motor vehicle expense, incl. credit or debit for Jt. trench at $.15/ft. where involved	2,992.70	1,602.07	2,106.67
Cost/lot	36.06	27.15	21.28
Total cost/lot	53.93	46.73	40.50

***NOTE: The cable facilities for Units Nos. 2 and 3 were installed on separate construction work orders. However, the 400-pair feeder cable which serves Unit No. 3 was installed on a Unit No. 2 work order. Consequently, the above figures reflect appropriate transfer of material and labor costs from Unit No. 2 to No. 3 to cover an increment of feeder cable facilities.**

The preceding cost analysis reflects the cost of buried feeder and distribution cables required to serve the three units. As previously mentioned, the telephone facilities were placed under the telephone company's Option No. 3 of the buried service program. This option also requires the telephone company to place the buried service wire into the house as part of the "buried service package." On the basis of the service wires that have been installed in this subdivision to date, these buried service entrances are being installed at a cost of $24.37 per lot. The comparable estimate for aerial service entrances would be approximately $17 per lot.

The cost of placing the buried feeder and distribution cables for the three units, however, are approximately 27 per cent to 47 per cent less than comparable aerial costs. The estimated cost of serving this subdivision on an aerial basis is $75 per lot. The $75 figure includes poles, anchors, guys, feeder cables, distribution cables and associated terminals.

This and similar jobs recently completed by the telephone company confirms conclusions on buried *vs* aerial cost studies for subdivision service facilities. Basically, these conclusions are: A new subdivision being developed in an area where good digging conditions prevail can be served at less expense on a buried basis than on an aerial basis. This, of course, is based on the assumption that the developer is cooperative in establishing rough finished grades and providing a clear path for all trenching operations.

The cost figures reflect a fairly stable unit material cost. The slight variation is due to the conditions referred to in the "Note" under the cost analysis, i.e., in laying out buried feeder and distribution cables within a subdivision it is necessary to base the cable sizes on the total number of lots to be served and to place standard sized cables which most nearly meet the ultimate requirements. Because of the fact that it is not economical to "tailor make" cables to fit specific requirements, spare facilities will vary from job to job. This explains the slight variation in material costs.

The labor costs outlined reflect a progressive decrease in cost per lot from Unit No. 1 to Unit No. 3. This is a positive indication of the savings that are possible when a properly coordinated approach is taken to the problem of serving new subdivisions under this new concept.

(To be continued)

United Utilities Earnings Up; Increases Dividend

United Utilities, Inc., which reported record earnings this year and expects a continuation of the favorable trend, has increased its quarterly dividend for the fourth time since 1959, according to R. Crosby Kemper, board chairman.

Directors have voted a quarter dividend of 22 cents a share, payable Sept. 30 to stockholders of record Sept. 8. The company paid an initial dividend of 20 cents a share in the previous quarter, following a 2-for-1 stock split, the first change in the common capitalization. The annual rate on the present dividend is 88 cents, an increase of 25 per cent over the 1960 rate, adjusted for the stock split.

Gross revenues for the year ending July 31, 1961, were 9 per cent greater than for the previous 12 months, and net income rose 17½ per cent. In dollar volume these are record highs for United Utilities.

For the first seven months of 1961, net income available to common stock was $3,873,846, equal to 75 cents a share on an average of 5,135,887 shares outstanding, as compared with $3,356,-284 or 66 cents a share for the same period a year ago when 5,070,252 average shares were outstanding.

Gross revenues from January through July totaled $28,876,451, up from $26,788,000 for the same period in 1960.

For the twelve-month period ending July 31, net income available for the common stock was $6,671,643, equal to $1.30 per average share, as compared to $5,640,109 or $1.13 per average share a year earlier. Revenues of $49,245,322 were up in comparison with $45,125,948 for the preceding twelve months.

Mr. Kemper reported that the company's modernization and dial conversion program is proceeding as scheduled, and that 92 per cent of its telephone properties will be dial-operated by the end of this year. The remaining manual exchanges will be converted to dial in 1962. The current year's construction budget of 26 million dollars is the largest in United Utilities' history.

AUTOMATIC TOLL STATEMENT BILLING THROUGH ELECTRONIC DATA PROCESSING

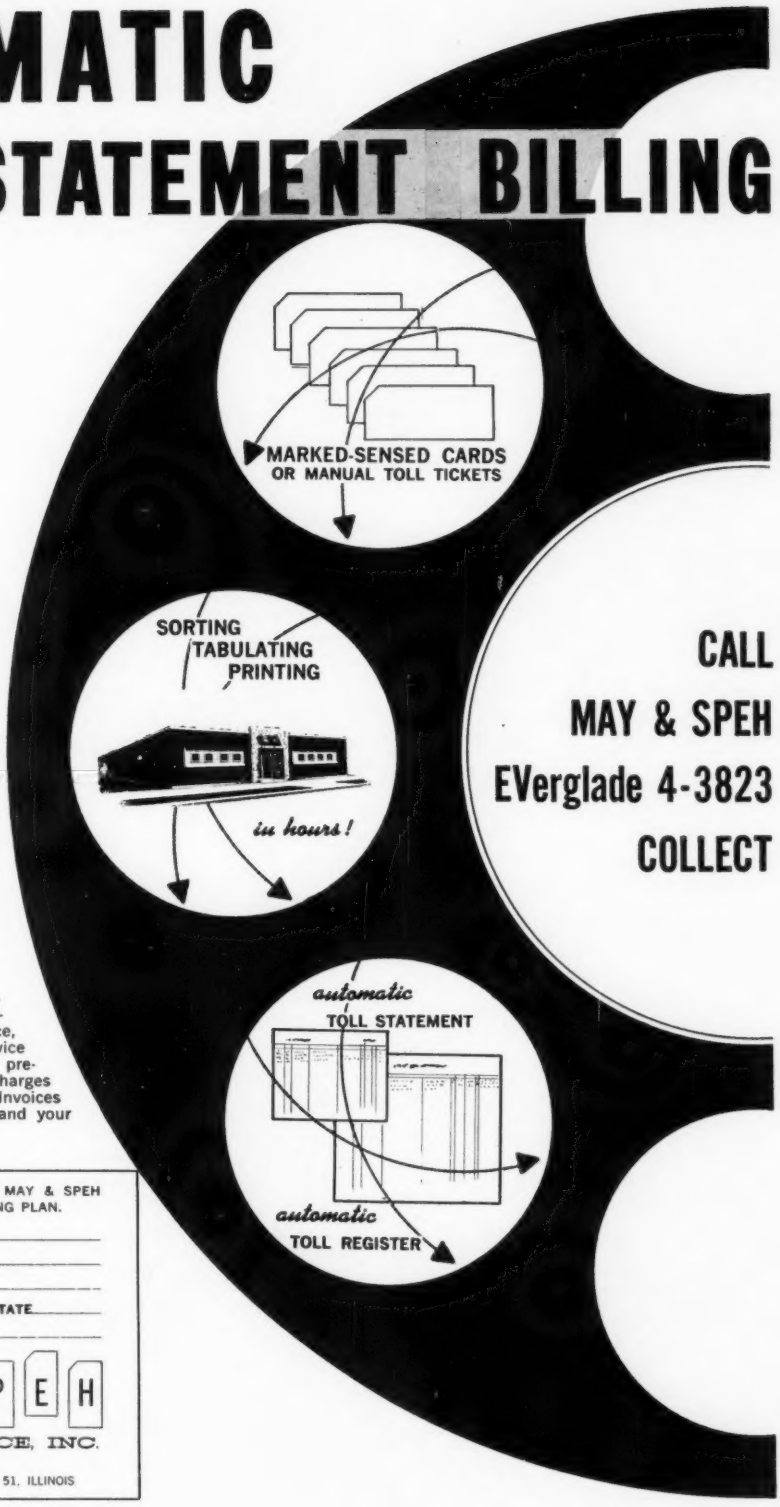
NOW . . . a fast, dependable, economical way of handling and billing TOLL STATEMENTS is finally being realized!

May and Speh, experts in automatic data processing, have introduced the Electronic Toll Statement Billing Plan.

It eliminates the drudgery and "uncertainties" of manual billing . . . yet actually costs less.

Marked-sensed cards (or cards punched from manual toll tickets) are fed through May and Speh's UNIVAC computer where they are sorted and tabulated. The result: automatic toll statements and toll registers, invoiced, computed and printed.

May and Speh also provides a complete billing service. Printed customer invoices containing toll service, telegram, directory advertising, service connection, partial rental, credit, previous un-paid balance and other charges are prepared at a nominal cost. Invoices are mailed with toll statements and your advertising material.



SEND MORE INFORMATION ON THE MAY & SPEH ELECTRONIC TOLL STATEMENT BILLING PLAN.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

PHONE_____

MAY AND SPEH

TABULATING SERVICE, INC.

EVerglade 4-3823

4020 WEST DIVISION STREET • CHICAGO 51, ILLINOIS

IN THE NATION'S CAPITAL

Concluded from page 19

appeared in the scene, Hope commented, "That's what Newton means by TV's vast waistline."

In the finale, Gary Moore sang in a chorus, "I just say 'hello' and right away I have to say 'goodbye for a while'. It's been an uplifting show and I'd like to say I hope Newt had a laugh or a smile."

Mr. Minow probably never dreamed there would be so much fame connected with public service.

When you probe a sore spot, though, you can expect a horse to whinny.

"Shop By Phone" Program

Department stores throughout the country are awakening to an overlooked technique for building sales—telephone shopping.

Since the end of World War II, the exodus of population from cities to the suburbs has spawned the boom in regional shopping centers. The suburbanites found they could buy everything they needed without ever going downtown. As a result, department stores and specialty shops in the core of cities experienced drastic drops in sales.

In 1954, American Telephone & Telegraph Co., seeking new ways to spur the demand for telephone service and equipment, commissioned N. W. Ayer & Son, an advertising agency, to study the requirements of a successful telephone selling department. The results of the survey indicated that telephone selling could open up rich new veins of telephone service if the department stores handled their end of the program satisfactorily.

In 1956, The Chesapeake & Potomac Telephone Co. of Maryland, in cooperation with Baltimore's Stewart & Co. Department Store (which had some experience in the field), launched a pilot telephone selling program. During 14 months of the test, sales volume in Stewart's downtown store continued to decline from the previous year's volume at an average rate of more than 2 per cent. Stewart's new telephone selling department, on the other hand, showed an average monthly sales *increase* of more than 33 per cent. This success story was enough to convince five other Baltimore stores of the technique's potential and a city-wide promotion program was launched with the slogan: "Shop by phone when you can't leave home."

Added momentum was given the program by a presentation before the convention of the National Retail Merchants Association called "What's Popping in Shopping." Strong advertising followed. An eight-page insert was placed in trade magazines. Monthly ads were run in *Merchants Trade Journal, Stores,* and *Department Store Economist.* Next ads were inserted in consumer magazines, including a two-page color spread in the August issue of *Reader's Digest* headed: "How to shop at Sears at 3:00 a.m." The ads pointed out how items could be purchased from the famous Sears catalog by telephone.

Now the Bell System is placing advertisements in the December, 1961, issues of *Ladies' Home Journal* and *McCall's* showing two female hands holding a large load of finished laundry. The copy reads: "Have your hands full at home? . . . Then shop by phone!" Hitting the other side of the telephone selling technique, AT&T has advertisements scheduled in the September issues of *Department Store Economist, Merchants Trade Journal* and *Stores,* telling department stores and specialty shops how much additional profits they can accrue through telephone selling.

In addition to the increased volume of calls which it has stimulated, the new promotion has reportedly brought more than one million dollars in revenue to Bell from the installation of equipment alone.

Army Sells By Telephone

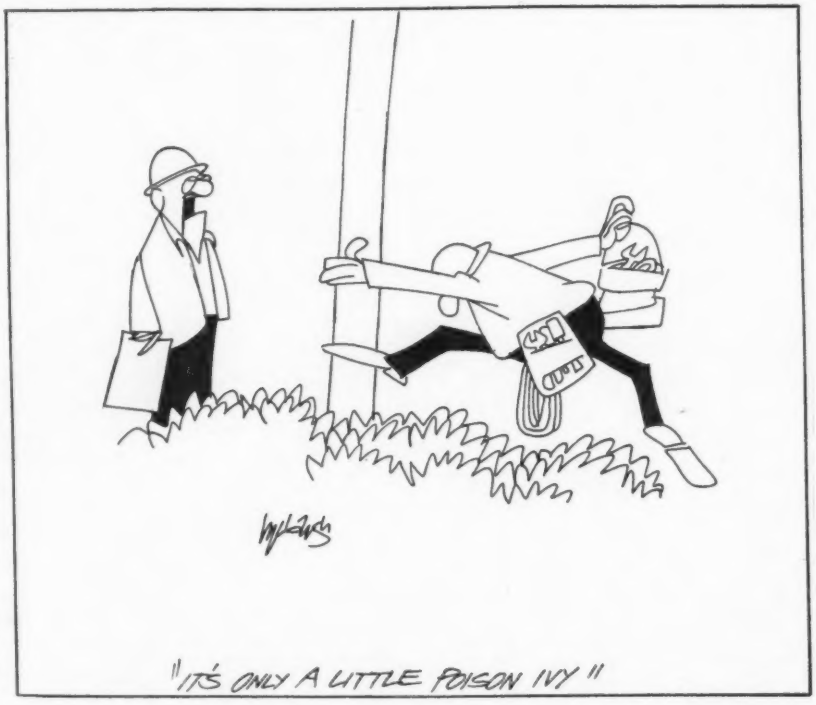
Last month the Army held a conference at Washington's Shoreham Hotel for its surplus disposal experts, and, it was revealed during the meeting, they also have adopted the "shop-by-phone" technique.

Plans were being formulated for a mammoth nationwide telephone auction to unload a variety of military surplus. The experts felt that the telephone auction would get better prices and save money for the taxpayers, *which is a noble but all-too rare philosophy in Washington these days.*

Such things as tugboats, socks, railroad cabooses, blankets, and earth movers were scheduled to go on the block. The caboose, incidentally, belonged to the Navy and could be inspected at the Naval Weapons Laboratory in Dahlgren, Va. (which has no railway connections with the rest of the country). Estimated value of the hodgepodge was between 12 and 15 million dollars.

The Army was planning six bidding sites: Atlanta, Fort Worth, New York, Columbus, O., Denver, and Berkeley, Cal., all linked by telephone to a control point in Atlanta. The Army conducted a series of tests, including nationwide closed circuit television, to see which items sold by the government each year would bring the best prices through nationwide bidding. The telephone hookup, it was felt, would generate more competitive bidding.

The taxpayer reportedly was saved about 1.5 billion dollars last year by the Army's Disposal Branch selling and transferring unneeded equipment.



USI'S *Newest...*

Distributed by Graybar

THE MINIATURE EXTENSION RINGER!

- Housed in durable, shock resistant plastic
- Compatible dawn gray color
- Smallest ($2\frac{7}{16}$ x $3\frac{7}{16}$ x $4\frac{7}{16}$") ringer available
- All frequencies and Straight Line
- Easily adjusted ringer volume control
- Engineered to assure subscriber satisfaction

Write or call for Bulletin P61F1

UNITED STATES INSTRUMENT CORPORATION
CHARLOTTESVILLE, VIRGINIA

USI CORP.

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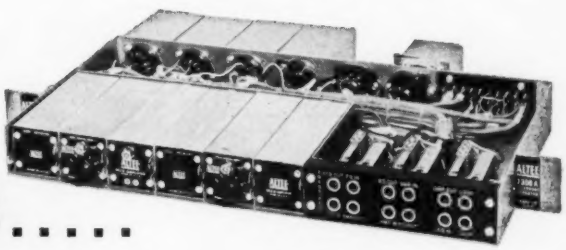
2 — 4/4 — 4/2 — 2

SAVE TIME & SPACE WHEN ESTABLISHING REPEATERED VF TELEPHONE CHANNELS.....



Altec 7300A Telephone Repeater Terminating Unit comes wired for rapid assembly of three repeater systems!

• power and space economy • superior performance • minimal heat generation • eliminates 130 v supply • reliability • plug-in modularity • simplified installation

The Altec 7300A TRTU provides rapid means of establishing repeatered VF telephone channels for general telephone, telegraph, teletype circuits, and PBX installations. The 7300A comes fully wired to receive plug-in type Altec circuit components that may be easily assembled for one of three telephone repeater systems: two-wire to four-wire termination, four-wire intermediate, two-wire to two-wire.

The compact unit occupies only 1¾" rack height on standard 19" channel relay rack. An insulated jack strip with 12 jacks permits routine system testing. Transistor amplifiers within the unit are energized by local battery or either 24-26 or 48-52 volt special power supply. 130 volt supply is not required.

The 7300A and the entire Altec line of plug-in repeater amplifiers, equalizers, networks, transformers, relays and pads is available for speedy delivery, normally from stock. For technical details and schematics on the 7300A, write for FREE Bulletin #13783-1, Dept. TA-9.

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Fire Fighter Is Speaker At USITA Plant Conference

M. Stapleton Bodine, chairman of the Plant Committee of the United States Independent Telephone Association, has announced that M. M. "Smokey" Batzer of Philadelphia will be a featured speaker at the Plant Conference during the USITA convention to be held in Chicago's Conrad Hilton Hotel Oct. 8, 9, 10 and 11.

"Smokey" is an internationally-known fire prevention and fire-fighting specialist and has conducted on-the-job industrial fire prevention and damage control demonstrations world-wide.

Prior to World War II, Mr. Batzer, a graduate of the University of Pennsylvania, was engaged in marine and general insurance claims work, handling the adjustment and settlement of losses, both in the U. S. and abroad.

As an officer of the United States Naval Reserve during World War II, Mr. Batzer was called to active duty on the outbreak of hostilities. Initially, he assisted in the establishment of procedures necessary for the improvement of fire-prevention and fire-fighting

M. M. "Smokey" Batzer of Philadelphia, who will speak at the Plant Conference during the USITA convention.

training aboard Allied ships and in major waterfront port facilities.

The early course of his Naval duties also took Mr. Batzer into the counter-espionage field. In a laboratory specially set up for the purpose, he worked on the duplication of every known sabotage method used in starting fires aboard ships or in harbor installations. The purpose was to assess and evaluate these methods in the laboratory in order to devise effective countermeasures. Sabotage "hardware" investigated ranged from incendiary fountain pens to chemically treated calling cards.

Mr. Batzer participated as damage control officer in the D-Day landings in every major Pacific invasion after Guadalcanal except Iwo Jima, up to and including Okinawa. He spent a considerable time in the Pacific war theatre, moving from merchant ship to merchant ship training officers and crew in the proper use and maintenance of shipboard fire-fighting and fire-detection equipment.

After the end of the war, having been returned to inactive duty by the Navy with the rank of lieutenant commander, Batzer established his own "on-the-job-industrial-fire-prevention-and-pre-emergency-organization-training" firm.

Initially, he concentrated on the marine and ship segment of the industrial fire-prevention and fire-fighting field. Since then, however, the scope of his operations has been expanded many times and now takes in a wide cross section of large and medium size land-based North American industry, as well as the shipping field.

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Telephone's Use in Sales, PR, Color Promotion Reported

The telephone is a valuable sales tool and probably one of its most enthusiastic supporters is the Florida Citrus Exchange of Tampa.

The Exchange is the federated marketing cooperative which sells fresh Florida citrus nationally for 42 packing associations and affiliates located throughout Florida's citrus belt.

It uses long distance extensively to sell oranges and grapefruit to every continental state but two, running up an average monthly telephone bill of $20,000.

However, the Exchange estimates that each of its six salesmen puts the telephone to good use in chalking up better than 5 million dollars apiece in telephone sales each year.

•

Another way to use the telephone in merchandising is reported by *Marketing*, Toronto, Ontario, Canada. The publication advises its retail merchant readers in making up an ad, to leave out the price in one good bargain, display their telephone number prominently, and tell the newspaper readers they can learn the special price by telephoning.

A hint to telephone salesmen, also from *Marketing*, is that a script on how to get through a screen of receptionists and secretaries is a helpful tool. It can be compiled from the experiences of successful salesmen and can contain a variety of telephone approaches, suiting many possible situations. A smart way to present it is in flip-chart form, ready for action the moment it's needed.

•

Usages of the telephone to keep up good customer and community relations are valuable hints telephone companies can pass on to business and civic subscribers.

In Carthage, Mo., the Murray-Duncan Drug Store calls patrons telling them that their color film finishing work is ready for pickup. This creates good will and repeat business.

In Decatur, Ill., an unusual use for an automatic answering set is reported. The Decatur Public Library has installed one to take messages after hours.

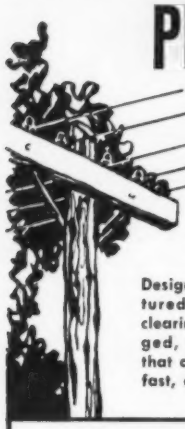
The caller can leave his question as a recorded message and the librarians will try to obtain the requested information as soon as possible after the library opens in the morning.

•

Telephone companies may be interested in a new promotion utilizing the

LINE CLEARING

PRUNERS



FAST
CUTTING
DEPENDABLE
HEAVY DUTY

Designed and manufactured with utility line clearing in mind. Rugged, heavy duty tools that are famous for their fast, easy cutting action.

POLE PRUNERS

No. 11

A strong, durable, easy cutting pruner head that cuts up to 1" branches with ease. Open stock spruce extension poles in 6 foot sections, with telescoping aluminum joints.

No. 12

Cuts up to 1½" branches. Pruner head is malleable iron casting, husky, unbreakable. Smooth, easy cutting action.

LOPPING SHEARS

Heavy duty, fast, easy cutting loppers designed for utility use.

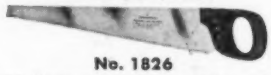
No. 75

Compound lever cutting action, smoothly slices through 1¾" to 2" branches.

Nos. 525, 530

The famous "Tiffany" pattern lopping shears 25" and 30" models. Cut branches up to 1¾".

PRUNING SAWS



No. 1826

26" blade of Sandvik Swedish steel especially designed for tree work. For those spots where a chain saw can't operate.

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telephone, initiated by General Electric Co. Knowing that a bedroom telephone and a clock often share the same nightstand, General Electric has introduced clocks in telephone colors. The theme of the promotion is "Time to Talk About Color."

"Riser," a new lighted dial alarm clock has been color-styled to match four popular telephone colors, beige, white, turquoise and pink.

Ill. Bell Helps Employes Plan for Retirement Years

A recently issued directory of retired Illinois Bell Telephone Co. employes shows that they have more than 400 interests and remain active. The company credits these healthy retirement attitudes to its group-discussion-type "retirement school" and to pre-retirement interviews where employes learn to think ahead. The company's surveys show that men and women look at the golden years differently, but both agree that it's necessary to keep busy.

Illinois Bell retirees raise burros, compose songs, write stories, go to college, enjoy aquatic gardening. Many serve charities, youth groups and hospitals through the Vail Chapter, Telephone Pioneers of America.

There are inventors, musicians, ham radio operators and birdwatchers among them. Some individuals have more than 20 interests. It's not uncommon for retired women to bait fish hooks, enjoy shuffleboard, throw horseshoes, play billiards and fix electrical appliances.

"Activity keeps them young," says George A. Bray, secretary of Illinois Bell's employe benefit committee, who has interviewed thousands of retirees. "But activity must be planned well ahead. It's hard to develop new interests the day you say good-bye at work."

Mr. Bray says men and women look at retirement differently. Women stress health and a well-balanced meal, while their spouses emphasize financial security. Here is how Illinois Bell women list in importance retirement considerations: Health and nutrition, adequate savings, interests and activities, a happy home life and life insurance. Telephone men jotted down their thoughts in this sequence: A debt-free home, health and nutrition, adequate savings, interests and activities and a happy home life.

Mr. Bray says happy retired folks have four qualities in common: A sense of humor, a genuine interest in others,

Union and management officials of the Lorain (O.) Telephone Co. inspect two safety awards which the company received this year for outstanding accomplishments in the prevention of on-the-job accidents. Inspecting the awards (left to right) are: Harold Werner, vice president of Lorain Telephone Co.; Bruce Meadows, vice president of Communication Workers of America, local 4370; R. E. Trinter, treasurer, Lorain Telephone Co.; and Joseph Knoble Jr., president of the CWA local. One award was presented to the company by the Industrial Commission of Ohio for 1,745,967 manhours worked without a lost-time accident. Ohio Independent Telephone Association also presented the company with an award for the best safety record in that organization during 1960.

satisfaction in helping people and acceptance of themselves (self-tolerance).

They reach this happy outlook by thinking ahead while fairly young, Mr. Bray says.

Retirement interviews at Illinois Bell begin at 50 for women, 60 for men. After 20 years' service, a woman can retire at 55, a man at 60. Compulsory retirement is 65.

Employes are anxious to start retirement plans early. In a survey, 43 per cent of the men said a man should start between 21 and 35. Thirty-nine per cent of the women agreed. Less than five per cent of each group thought plans should begin as late as 60 or 65.

Since 1951, 2,000 Illinois Bell employes have attended one-day retirement conferences in Chicago and Springfield, Ill. A group is limited to 18 persons. It's small and intimate. They "trade" plans and problems, stimulating each other's thinking. There are few speeches; conferees do most of the talking.

Illinois Bell's medical director, Dr. H. I. Meyer, discusses the physical and mental sides of aging, how to eat (high protein diet), exercise (essential but should never be tiring), and plan one's day (to be useful and busy) to adjust to these changes. Company benefits are explained.

There are 5,800 listings (3,860 of them women) in Illinois Bell's annual directory of retired employes. They have served more than 214,000 years, with the average length of service more than 39 years for men; 37 for women.

Illinois Bell's retired men and women live in 43 states (including Hawaii and Alaska), Canada, Ireland and Mexico. Illinois has the greatest concentration, with 4,276. Florida is second with 531; California, third, with 289.

Mr. Bray says retirees go where their hearts are. Some leave the city for the home town of their childhood. Others move to a mild climate. Several women went to Alaska, in spite of the cold, because "it's such an interesting place."

American Portrait

Recipe for success: Be polite, prepare yourself for whatever you are asked to do, keep yourself tidy, be cheerful, don't be envious, be honest with yourself so you will be honest with others, be helpful, interest yourself in your job, don't pity yourself, be quick to praise, be loyal to your friends, avoid prejudices, be independent, interest yourself in politics and read the newspapers. — BERNARD BARUCH.

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...without additional cable!
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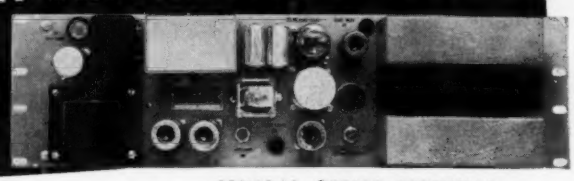

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The ideal, low-cost way to provide additional *high-quality* postpay paystation service — where wire facilities are not available — where plant expansion for such facilities must be postponed — where additional seasonal postpay paystations don't warrant expensive plant installation.

★ *Low First Cost* . . . uses standard AM principles to simplify and minimize components — and low frequencies, below 140-kc.

★ *Low Installation Cost* . . . simplicity assures it. No expensive test equipment needed — and no time wasted using it. Built to "Connect and Operate".

★ *Low Operating Cost* . . . a complete channel uses only 9 tubes of 2 types. We can show you savings figures!

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★ *100% Recoverable* . . . and easily. You can quickly relocate any station in a more favorable spot.

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CCITT Assembly of Interest To U. S. Telephone Men

Proceedings of the second plenary assembly of the International Telegraph & Telephone Consultative Committee (CCITT), which met in New Delhi, India, from Dec. 8 to 16, 1960, were reported in the August 1961 *Bulletin of Telecommunications*, journal of the International Telecommunications Union.

Jean Rouviere, director of CCITT, in reporting on the meeting, reviewed the following items of special interest to the U. S. telephone industry (we quote):

Technical results. Transmission and maintenance questions. A new transmission plan was studied. The existing recommendations laid down only the equivalent for international circuits, and general limiting figures for the reference equivalent on national systems. The new plan gives detailed rules for the equivalent of international circuits and of the national trunk circuits which may be connected to them by four-wire switching, thanks to which the following objectives should be simultaneously attained:

The quality of most medium-distance telephone calls should be improved:

In very-long-distance calls (up to 15,000 miles or thereabouts), which will be available very shortly, the quality should be comparable to that at present offered by medium-distance communications by cable or radio relay;

It should be possible to cut out singing in all calls and to reduce echo, without having to use too many echo suppressors.

The plenary assembly approved the recommendations leading to stability in communications and to a certain reduction in echo effect. Additional investigations will be carried on between 1961 and 1964.

Detailed specifications were worked out for the 12 Mc/s system, which offers 2700 telephone channels on a coaxial pair of a kind already standardized by the CCIF. The use of this system for the simultaneous transmission of telephony and television is still under consideration. Great progress has been made in the standardization of coaxial cables of smaller diameter and in the drawing-up of specifications for transistorized equipment offering 300 telephone channels on a pair of this kind.

Recommendations were made about balanced-paid transistorized cable carrier systems.

The apportionment of work between the CCITT and the International Electrotechnical Commission in standardization of cables was more accurately defined.

A thorough investigation of transmission performance on cable circuits (European system, trans-atlantic underwater cables) was carried out, with observations of incident, abrupt interruptions in transmission (lasting several milliseconds), noise peaks, etc.

To this end, a number of specially-chosen circuits were investigated. The findings were carefully analyzed, and the lessons learnt therefrom should prove extremely useful.

Another investigation has been begun with a view to defining an automatic transmission measurement device, so that, henceforth, it should be possible to do away with circuit testers.

Telephone operational and switching questions. Major advances have been made in the new field of fully-automatic international telephony. Principles have been laid down for the apportionment of charges between the administrations concerned, and the requisite metering devices have been defined.

There has been a standardization of the national ringing and busy-flash tones, so that a subscriber in country A, hearing a tone from country B, may know beyond all manner of doubt what that sound signifies. In view of the very varied tones used by different countries and the fact that changes imply alterations in all national centres, the choice of the frequency ranges and admissible rhythms for the tones was a matter of no little difficulty.

Statistical investigations of traffic were undertaken, with a view to determining the busy period and to evolving an unambiguous definition for it. They will continue in the period from 1961 to 1964.

Lastly, the plenary assembly had some misgivings about the standardization of rates for the lease of circuits, be they telegraph or telephone. Study of this matter will have to be continued.

Definitions and symbols. Detailed proposals for a thorough overhaul of the list of essential telecommunication terms were adopted by the plenary assembly, and the review questions will be undertaken. This will be a matter of several years. The revised list will contain terms and definitions in Spanish and Russian as well as in English and French. The terms will also be included in German, Italian, Dutch, Polish, and Swedish.

As an intermediate, a supplement will be issued to the existing (1957) edition, comprising additional defini-

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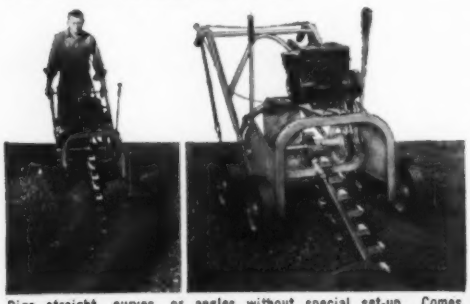

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WIRE TERMINALS — Now in 31 catalog numbers

For use at junctions between multiple line wire and drop or bridle wire . . . in sizes 1, 2, 3, 5, 6, 11, 12, 16, 18 and 26 pair. All terminals are self-mounting or supplied with a mounting bracket.

PROTECTED • UNPROTECTED

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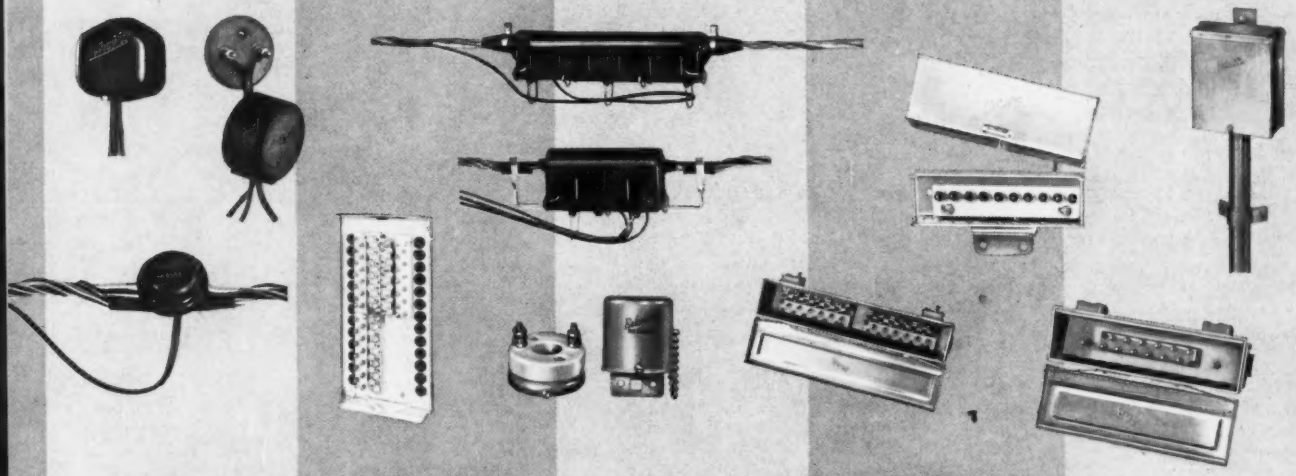

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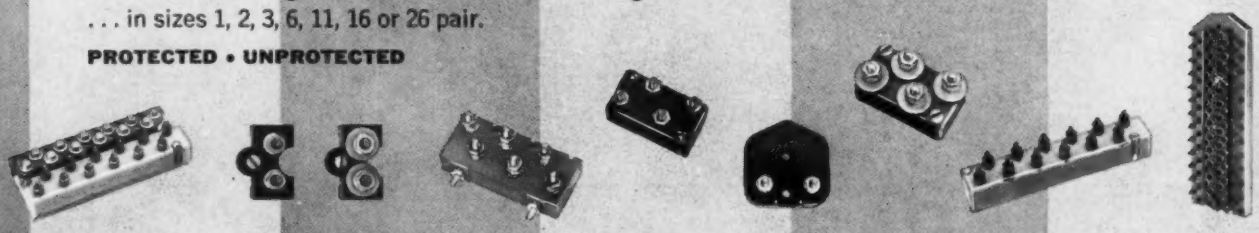

Do you have a particularly difficult installation problem? Our engineering department may be able to help you solve it.

THE TELEGARD UNIT

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tions, or modified definitions, approved by the Assembly.

The Assembly decided, too, that the Committee, in cooperation with the International Electrotechnical Commission, would draw up a list, applicable internationally, of telecommunication symbols.

AE Appoints C. C. Crow Labs Project Engineer

Clarence C. Crow, central division manager for General Telephone Co. of the Northwest, was appointed a project engineer in the Telephone Switching Systems Development department of Automatic Electric Laboratories, Inc., Northlake, Ill., effective Sept. 1, according to announcement by Frank D. Reese, president of the Laboratories, and A. J. Barran, president, General Telephone Co. of the Northwest.

Mr. Crow joined General Telephone in Spokane as an equipment engineer in July, 1958.

He had previously been with North Electric Co., Galion, O., for nine years as circuit design supervisor.

At General Telephone Co. of the Northwest, he served as plant extension and building engineer from 1958 until his promotion to division manager in 1960.

C. C. CROW

He attended Ohio State University and the University of Georgia, and holds a BS degree in electrical engineering from Case Institute of Technology.

He is a past section chairman, (Mansfield, O., of the American Institute of Electrical Engineers and a registered professional engineer in the state of Ohio.

A World War II veteran, Mr. Crow served in the United States Army from August, 1943 to February, 1946.

Comptometer Names AE, Leich To Market Electrowriter

Automatic Electric Sales Corp. and Leich Sales Corp., subsidiaries of General Telephone & Electronics, have been appointed by Comptometer Corp. as national sales representatives for Electrowriter communications instruments to Independent telephone companies. The announcement was made jointly on Sept. 1 by the three firms.

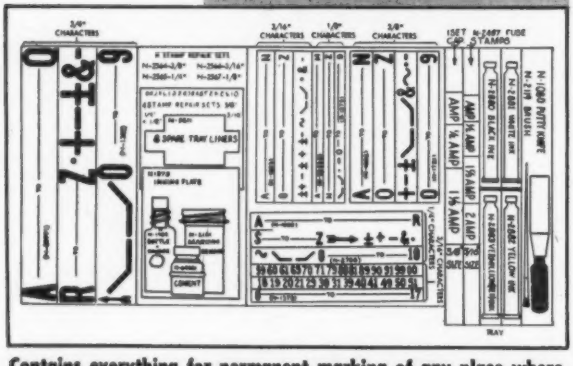
Representation by Automatic Electric and Leich to the Independent companies, which will offer Electrowriter service to their subscribers, makes the service available to business and industry throughout the nation for the first time. Comptometer presently markets the device through its own national sales force in the Bell System areas.

Electrowriter instruments, manufactured by Comptometer instantaneously transmit and receive written messages and drawings, and may be attached to regular dial telephones to provide customers with alternate voice-write service.

Written data is transmitted by simply writing with the attached ball point pen on plain or form paper carried in

Neuses

SWITCHBOARD & PANEL
NUMBERING AND LETTERING KIT



Contains everything for permanent marking of any place where a non-fading, vivid, easy-to-read, clean marking is required. Ideal for marking switchboard panels, junction boxes, subassemblies, chassis, cables, wires, etc. No tapes. Special oil-base heavy stamping inks dry with clear brilliance. Can be used for marking almost any background material.

CONTENTS: Peg rubber stamps ¾", ⅜", ¼", 3/16", ⅛". A-Z, numbers, symbols. Stamp repair sets—cement for repairs. Fuse capacity stamps ⅜" and 3/16". Tubes of inks—English Vermilion, Yellow, Black and White. Inking plate, knife, brushes, cleaning fluid. Housed in sturdy steel carrying case—12¼" L x 7½" W x 5" D. No. N-2315 complete..... $66.50

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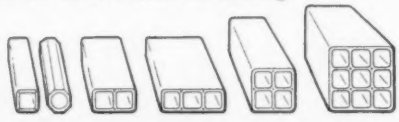

SINGLES TWO-WAY THREE-WAY FOUR-WAY NINE-WAY

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327 Fifth Avenue, Pittsburgh 22, Pennsylvania

the transmitter, and the writing is simultaneously recorded, as written, on all associated receiving units regardless of number or distances.

Independent telephone companies presently offering Electrowriter service to their subscribers are the Hawaiian Telephone Co., Lincoln (Neb.) Telephone & Telegraph Co., Warren (O.) Telephone Co., Mansfield (O.) Telephone Co., Western Reserve Telephone Co., Hudson, O., and Mankato (Minn.) Citizens Telephone Co.

Electrowriter users include utilities, airlines, manufacturers, hospitals, governmental agencies, brokerage houses, wholesalers, retailers and hotels.

Union Carbide Names Nissen Polypropylene Manager

William C. Nissen has been assigned as project manager—polypropylene in the new products marketing department of Union Carbide Plastics Co., Division of the Union Carbide Corp., according to the announcement by W. C. Quinby, department manager.

Mr. Nissen will be directly responsible for establishing and broadening markets for Bakelite brand polypropylene.

This appointment is in accordance with the company's intention, announced earlier this year, to expand its polyolefins marketing interests to include polypropylene.

Until his new appointment, Mr. Nissen served as a technical sales representative, working out of the company's Los Angeles, Cal., sales office. While there, he was responsible for the sale of Bakelite plastics for molding, extrusion and calendering.

A graduate of Yale University, he received a bachelor of science degree in industrial administration in 1950.

He joined Union Carbide Plastics Co. in 1953, after completing three years of service in the Navy with the rank of lieutenant (j.g.).

National-Standard Names Canada Wire As Distributor

Canada Wire & Cable Co., Ltd., Toronto (Leaside), Ont., has been appointed exclusive sales agent for Copperply® communications wire in Canada, according to John W. Becker, vice president of National-Standard Co. of Canada, Ltd.

Copperply copper-covered steel wire is manufactured at National-Standard's new plant in Guelph. It is used for telephone conductor wire, strand, drop wire and other applications.

"Our agreement with Canada Wire & Cable company is based on their

1

2

3

4

Instant
Shelf-Ette®

15 MINUTES . . . That's all it takes to convert an existing installation into an attractive, lighted Shelf-Ette.®

It's fast and easy to install. One person can do the job in 4 EASY STEPS.

1. **Remove the shelf.**
2. **Slip Shelf-Ette® over existing #144D backboard installation.**
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4. **Replace shelf. Bracket attaches to bottom of shelf and against wall, holding bottom of Shelf-Ette® securely.**

And now you have a beautiful, lighted Shelf-Ette® . . . made of clear acrylic plastic and high-pressure laminated plastic, white speckled with gold sequins.

This Shelf-Ette,® the GP-4020, List 4, provides that certain "extra" that pay stations need. There's extra attractiveness, extra privacy for the user, plus extra ease in installing.

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MODEL GP-4020, List 4

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broad distribution and sales coverage, and their excellent reputation in the Canadian electrical and communications field," said Mr. Becker.

USI Corp. Appoints Western, Pacific, Central Managers

John T. Robertson, vice president-marketing, United States Instrument Corp., Charlottesville, Va., has announced establishment of five regional sales areas to serve the continental United States and the Pacific. Regional managers are now located in San Francisco, Chicago, and Honolulu, Hawaii.

According to Mr. Robertson, "The field of customer-manufacturer relations and the pressing need for closer liaison between our facilities and the expanding telephone market is the prime factor behind this move."

Harry L. Blackford has been named West Coast regional manager. Mr. Blackford is a native of Ohio and attended Ohio Wesleyan University and Baylor. Prior to joining USI, Mr. Blackford was manager of staff engineering at ITT-Kellogg.

Mr. Blackford's telephone career started with General Telephone Co. of Ohio in Marion, O. Later he joined ITT-Kellogg as regional engineer in

H. L. BLACKFORD

Mansfield, O., and in 1959 moved to Chicago as ITT-Kellogg staff engineer.

Mr. Blackford's responsibilities have been in the field of COE marketing, planning and sales. He served in the Navy in World War II.

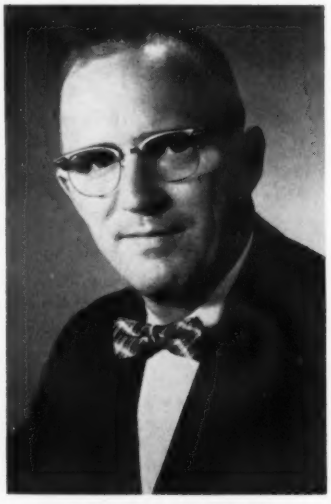
Robert C. Heerdink is the new Pacific regional manager. A native of California, he attended Loyola University in Los Angeles. Before joining USI, he was associated with Radio Corp. of America in the government service division.

Mr. Heerdink has been in the telecommunications and related industries for nearly 21 years. His communications career began with Pacific Telephone & Telegraph Co. in Los Angeles. Prior to his RCA association, Mr. Heerdink held engineering and sales positions with ITT-Kellogg, and was

R. C. HEERDINK

communications products manager for Sequoia Wire & Cable Corp., and also represented Mathias Klein & Sons, Inc. of Chicago.

Mr. Heerdink, now a resident of Hawaii, will be serving USI's customers in that area and also in the Far East Area.



DONALD LEHRMAN

Mr. Heerdink served in the U. S. Navy's Submarine Service in World War II.

Donald Lehrman has been named central regional manager. Mr. Lehrman is a native of Illinois and attended

PWC

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Specifically designed for use aerially supported by messenger or underground in ducts.

Conforms to REA Specification PE-22 and IPCEA Type I S-56-434.

Available in No. 19, 22, 24 and 26 AWG from 6 to 400 pairs.

Fully color coded with all pairs guaranteed.

Longitudinal 8 mil aluminum shield corrugated on large diameter cables for flexibility.

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Northwestern University and Illinois Institute of Technology. He was associated with ITT-Kellogg as staff engineer in marketing previous to joining USI.

He has been in the telecommunications business since 1945 with Illinois Bell Telephone Co. in plant and engineering departments, and, since 1957, with ITT-Kellogg on major projects such as SAGE and SAFE, and the Atlas and Titan missile programs.

Mr. Lehrman served in the U. S. Air Force during World War II and is currently a captain in the U. S. Army Reserve.

Krengel Named Lenkurt Vice President-Marketing

Herbert K. Krengel, formerly commercial marketing manager, has been elected vice president, marketing, and a director of Lenkurt Electric Co., Inc.

He succeeds William H. Heflin, who resigned to become vice president and general manager of Fisher Research Laboratory, Inc., Palo Alto, Cal.

Mr. Krengel has held a variety of engineering and management posts with Lenkurt Electric since 1950, when he joined the company as an electronic technician.

H. K. KRENGEL

Within two months he was promoted to applications engineer and then to manager of applications engineering. In 1953 he was made manager of systems development.

In 1956 he entered the marketing field as manager of commercial relations with the Bell System.

During 1958 and 1959 Mr. Krengel headed the "engineer, furnish and install" group which furnishes telecommunications systems on a complete package basis.

In 1960 Mr. Krengel was named commercial marketing manager, responsible for all sales and services to telephone companies, railroads, and other non-government customers.

In his new position, he also will be responsible for Lenkurt Electric sales and services to U. S. military services and civil government agencies.

Before joining Lenkurt Electric, Mr. Krengel spent five years with the installation division of Western Electric Co., and during World War II, served as a radar technician.

U. S. Motors Announces Organization Changes

United States Motors Corp. recently announced changes in departmental functions and personnel responsibilities within its marketing, engineering and manufacturing operations.

Louis Schriber, formerly vice president, sales, has assumed the new management responsibility of vice president, operations.

Mr. Schriber, in turn, announced his appointments of T. J. McGuire to vice president-marketing, and J. C. Christenson to vice president-engineering. Manufacturing appointments, he said, would be revealed at a later date.

In other personnel changes made, Jay Finehout was appointed to the position of directing a completely staffed sales-engineering group, E. W. Zipprich to service manager, and A. F. Barrett to research and development manager.

In line with the personnel shifts, according to Mr. Schriber, will be broadened sales policies.

He said, Mr. McGuire and R. L. Schultz, sales manager, are culminating programs which will include expanded market research and promotional activity involving extensive travel throughout the U. S. The program will be carried out in conjunction with the company's authorized sales and service representatives.

United States Motors Corp. manufactures engine driven generating equipment in capacities ranging from 300 watts to 750 kilowatts. The company also builds and markets Micro Power, a power stabilizing and standby unit used with communications systems.

Precious Little Things

"The first springs of great events, like those of great rivers, are often mean and little."—SWIFT.

New New — New New — New New Write for Sample

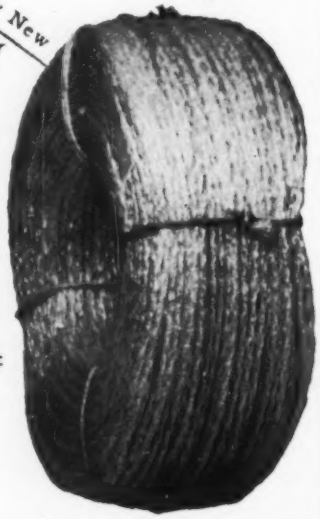
A Revolutionary NEW

LASHING

MATERIAL

You'll be surprised at its Light Weight

You'll be amazed at its Strength



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Cable Spinning Equipment Company

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CE 2-7234 or CE 2-7235 Topeka, Kansas

News on New Products

DATA TRANSMISSION — A new technique for high speed transmission of data has been developed by General Dynamics/Electronics, which says that with the new technique—named DEFT, for Dynamic Error-Free Transmission—data can be sent at rates up to 15,000 words per minute over ordinary telephone lines. Present high speed transmission systems generally require either a coaxial cable or a broadband very high frequency radio channel which uses up a much greater portion of the radio spectrum, according to General Dynamics.

The speed is equivalent to sending up to 150 conventional teletypewriter messages simultaneously over the same telephone line. DEFT could be used in exactly that way, the company points out; that is to carry 150 different teletypewriter messages at once, sort them automatically at the receiving end, and feed them into 150 separate teletypewriters.

In addition, DEFT is resistant to interference and noise. It is said that if applied to military communications, an enemy would find it exceedingly difficult to "jam" a DEFT message.

The DEFT system employs a new phase modulation technique. Alphanumeric characters—including "frames" of computer language for direct communication between computers — are coded into phase relationships among simultaneously transmitted tones. With the possible number of symbols that can be generated almost unlimited, the differences between the very few characters in the English alphabet become so great that automatic character recognition is claimed to be virtually error-proof. The character recognition technique does not require either dynamic logic or storage circuitry.

DEFT is flexible. Even greater error-correction capability can be achieved, either by widening the bandwidth—that is, using more of the radio spectrum—by increasing the signal power, by reducing the speed of transmission, or by any combination of these methods. These changes can be accomplished by simple controls on the equipment, and do not require any changes in circuitry or components, according to General Dynamics. Request NP1717.

•

TRANSISTOR RINGING CONVERTER—Leich Sales Corp. has announced a new type TRC2-25 transistor ringing converter that operates from a 48 volt dc source.

Powered by telephone exchange batteries, the TRC2-25 will operate during storms or other instances when 110 volt commercial line power has failed.

It requires almost no maintenance, Leich states, since it has no generator or other moving parts. If some maintenance is necessary, it can be done quickly. Each jack-in frequency unit consists of separate plug-in components for easy removal or replacement.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1717_____; NP1718_____; NP1719_____; NP1720_____;
NP1721_____; NP1722_____.

Name.....

Company.....

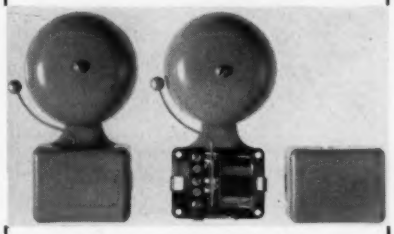
Street.....

Town and State.....

9/16/61

WHAT'S NEW AT
SUTTLE

3"—SE-7 BELLS!
LOUD, CLEAR RING
A-C or D-C Operation!



3" SE-7 BELL (cover on) 3" SE-7 BELL (cover off)

BRAND NEW from SUTTLE — A complete line of SE-7 3" Bells, A-C or D-C operated. Loud, clear ringing 3" gong and non-shorting plastic cover are finished in the modern blue-beige color. Equipped with heavy silver contacts and reed mounted armature with a flat retractile spring and stop.

Select Now the type you need!

Available in many operating voltages:

	Approx. Resistance ohms	D-C Min.	D-C Max.	A.C. 60 cycle Min.	A.C. 60 cycle Max.
SE-7A	270.0	14	40	25	50
SE-7C	2.6	2	5	4	9
SE-7E	105.0	10	20	18	30
SE-7F	680.0	24	60	35	60

Price: 1-9 4.45 ea. 10 & over 4.05 ea.

Order from Suttle or other distributors

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Designed exclusively for the telephone industry—used and approved by leading telephone companies.

Potting Material—Filled Epoxy Resin and Galvanized Iron Interior Shield.
Cable Type—Standard Lead
Optional, Polythylene
Cable Conductor—22 Gauge
Over-all Length Cable—12' Standard or to Customer Specification
Capacitance Tolerance—±5% Standard, Other Tolerances Available on Request
All Capacitance Values Available to 4th Decimal, from .001 to .100.
Building-out capacitor stubs should be ordered on Supplies Requisition as follows: "MIDWEC Stub, Building-Out Capacitor, ____pairs equipped, ____feet of cable, ____mfd. capacitors, ____tolerance."

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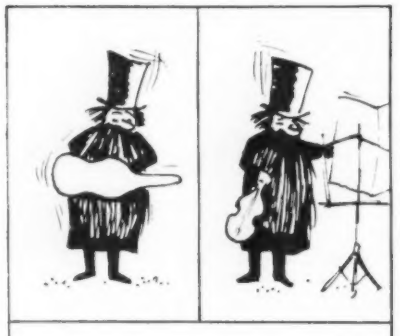

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A load limiting circuit, equipped on each frequency unit, protects against overloads, the company states, when ringing on a shorted or grounded line. Each frequency unit is 10½ inches high, 3½ inches wide, and 11 inches deep.

The ringing converter uses transistors to convert dc to low frequency ac for ringing a subscriber's telephone. It supplies five frequencies of the decimonic (20, 30, 40, 50 and 60 cycles) or harmonic (16-2/3, 25, 33-1/3, 50 and 66-2/3 cycles) or synchromonic (16 or 20, 30, 42, 54, and 66 cycles) series. Each of the frequency units has a 25 watt output (125 watts for the five-frequency converter) along with enough power for adjustable ring-back tone.

The complete five-frequency TRC2-25 is 10½ inches high, 18 inches wide, and 11 inches deep. It mounts on either a 19-inch or 23-inch relay rack. Request NP1718.

•

TAPE TRANSMISSION UNITS—Two types of high-speed punched tape transmission equipment, manufactured by Teletype Corp., a subsidiary of Western Electric, are planned by the Bell Telephone System to span varying requirements of business users. They are part of the new Dataspeed service which can handle 1,050 words a minute, said to be more than 10 times faster than exchange teletypewriter tape transmission equipment now available.

The two different types of Dataspeed equipment will provide service tailored to specific needs. Error detection and automatic correction will be available in future units for applications requiring these refinements.

The Dataspeed tape-to-tape senders and receivers have a capacity of 105 characters a second on a five through eight-level basis and will be able to handle most types of punched tape.

Type 1 Dataspeed service, for five-level teletypewriter tape only, will be available toward the end of 1961. It can accommodate an 11/16-inch paper tape for transmission where error detection or correction is not needed. This will be the least expensive system. Type 1 systems are now in trial use.

The Bell System's new Dataspeed service for transmission of business data consists of a tape sender (left) and a tape receiver (right).

Type 2, for five through eight-level punched tape, is scheduled for the first quarter of 1962. It is a universal system, accommodating 11/16-inch to one-inch tape.

It is expected that equipment with error detection and automatic correction features will be introduced in late 1962 or early 1963.

New "Lightweight"
PULLS ANY SIZE POLE EASIER!

Simplex ALUMINUM POLE JACK A-1538

35 LBS. LIGHTER — WEIGHS ONLY 60 LBS.

The first time and labor saving improvement in pole jacking in 25 years! Aluminum housing saves 35 lbs. without sacrifice of strength or capacity. Pulls or straightens poles—pulls butts—moves loaded poles...without digging. Husky—to handle the toughest jobs. Same construction features as famous SIMPLEX No. 329 — the standard pole jack of the Bell Systems.

15-TON CAPACITY
22-IN. LIFT

Simplex LEVER · SCREW · HYDRAULIC Jacks

Write for Descriptive Bulletin

TEMPLETON, KENLY & COMPANY
2557 GARDNER ROAD BROADVIEW, ILLINOIS

The Dataspeed system can be used alternately with voice services by businesses having existing Bell System leased lines since, Bell says, only a minimum of line-time will be required for transmission of volume data. An ordinary 50-word message or its equivalent in business data can be sent in less than three seconds.

Dataspeed tape senders and receivers also can use Data-Phone service over the ordinary telephone lines at regular long distance rates.

The Bell System points out that increased volume per minute, subsequent cost reduction and the versatility of the Dataspeed system widen the range of punched tape application to include such data situations as:

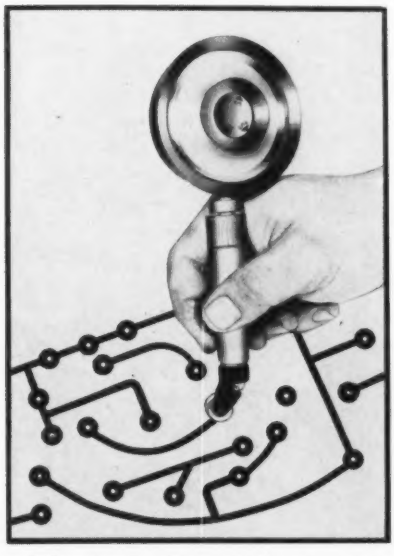
Centralized payroll processing for multi-unit operations.
Centralized computer service for a number of outlying branches.
Large volume transmission of letters, reports and other page copy.
Centralized record keeping for widely scattered operations.

Both the Dataspeed sending and receiving units are fully integrated and self-contained. Each unit is about 48 inches high, 15 inches wide and 24 inches deep. Circuitry is transistorized.

The Bell System's initial Dataspeed line will include the two types mentioned. Request NP1719.

•

TAPE PEN—A new drafting instrument, for fast, accurate application of self-sticking tapes to charts, printed circuit masters and other graphic illustrations has been announced by W. H. Brady Co.



With the Brady Quik Line tape pen straight, curved or irregular lines from

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It's Spiraflex®—the remarkable retractile from Commercial Cord. Spiraflex has b-i-g stretch, instant snap-back... gives noise-free long-life service. ■ Get Spiraflex in standard, 9, 15 or 25-foot lengths...jacketed with rugged PVC, in black or choice of colors. ■ Commercial Cord makes everything you need in phone, intercom, patch and related cords — straight and Spiraflex. ■ Get catalog, samples, prices from Commercial Cord Co., Clifton Springs, New York. Distributed by: Leich Sales Corporation, 427 W. Randolph Street, Chicago 6, Illinois; Automatic Electric Sales Corporation, Northlake, Illinois.
COMMERCIAL CORD

1/32-inch to 3/16-inch wide can be applied. It enables drawing with tape on any surface that takes ink drawing . . . and on most surfaces that can't be inked. Lines are uniform in width and density. They are accurate for placement to 0.010 of an inch, Brady says.

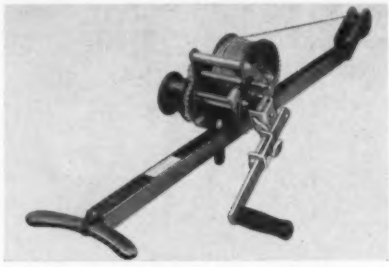
Typical applications for the tape pen are for printed circuit masters, maps, charts, graphs, office and plant layouts, drawings, artwork, power dispatcher boards, displays, photo negatives, technical illustrations and process flow diagrams.

The Brady tape pen is balanced for smooth operation. It is said to save drafting time because it requires no filling until the entire roll of tape is used. Corrections and changes are made fast by simply lifting up the misplaced tape and replacing it. This eliminates erasing, scraping, or smudged ink lines.

Brady says operation of the tape pen is as follows: A roll of tape is loaded into the styrene magazine and pulled through the inner shaft. The aluminum outer shaft is then replaced. After dialing the correct tape width on the magazine hub, the pen is ready to use.

The wheel assembly at the lower extremity of the pen simultaneously feeds, applies and burnishes the tape. Request NP1720.

WIRE-PULLER—Hykon Mfg. Co. reports that its Porta-Puller enables one man to handle all jobs involving the



pulling of wire through conduit.

This new portable machine is said to pull without strain on the operator.

The reinforced channel steel frame carries a double reduction winch with gear ratios that are said to increase leverage 115 times. Porta-Puller comes with 200 feet of steel cable guaranteed 2,000 pound strength, Hykon says. Double strength pulley head and heavy duty bearings are claimed to guarantee long service.

Hykon reports that the Porta-Puller bull wheel delivers a mechanical advantage of 22 to 1 for pulls of any distance using nylon or other rope.

The "easy-on, easy-off" handle is said to permit locking the handle to winch or bull wheel at choice of leverage ratios and also to allow free spooling with the handle not turning. Request NP1721.

•

TOE LIFT HYDRAULIC JACKS—New Simplex "Hydra-Toe" toe lift hydraulic jacks in a choice of self-contained or remote-controlled models have been developed by Templeton, Kenly & Co.

The units are designed to completely eliminate cylinder scoring. An alloy steel bar is suspended from the top between the twin hydraulic cylinders of the units and rides in the aluminum alloy housing. This arrangement is claimed to prevent any wear from affecting the hydraulic system—previously the principal source of trouble in toe lift hydraulic jacks. The suspended bar floats and has machined grooves in the large heat-treated toe.

The new units have a capacity of 15 tons. Model S-159 is self-contained and has both high and low speed pumps. Model R-159 is remote-controlled by hand or powered gasoline, electric or air pumps. With sufficient reservoir capacity, any number of jacks can be used to instantly pick up low loads. A jack and a gasoline pump, for example, the company says, will lift 15 tons, 9 inches in 12 seconds. Request NP1722.

COLLINS RADIO COMPANY

Has immediate openings in

Microwave-Carrier Sales

Expansion of operations and a redistricting of sales territories have created several attractive opportunities for persons qualified in technical sales. Those selected will receive product orientation at Dallas before going into the field.

Requirements include a degree in electrical engineering, or equivalent industrial experience, and at least four years' experience in communications sales, preferably in microwave.

Collins is an equal opportunity employer.

Send résumé, in confidence, to

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COLLINS

G. A. Reilly Joins Reilly Tar As Vice President

George A. Reilly has joined Reilly Tar & Chemical Corp. as vice president and general counsel and, in addition, has been appointed general manager of Republic Creosoting Co., a division of Reilly Tar.

Republic Creosoting Co. operates treating plants at Indianapolis, Ind.; Lima, O.; Mobile, Ala.; Minneapolis, Minn.; and Norfolk, Va. The company specializes in the treatment of telephone poles, railroad ties, etc.

and structural timber with creosote oil.

Mr. Reilly, prior to joining Reilly Tar, was a partner in the Chicago law firm of McLeish, Spray, Price & Underwood. He is a graduate of Colorado University and the Harvard Law School.

Welcome to Strangers

"It is an excellent circumstance that hospitality grows best where it is most needed. In the thick of men it dwindles and disappears, like fruit in the thick of a wood; but where men are planted sparely it blossoms and matures, like apples on a standard or an espalier. It flourishes where the inn and lodging house cannot exist."—HUGH MILLER.

Make It Easy to Answer

A publication titled *Irish Industry* describes the telephone as an "Essential Contact" in business, and among the suggestions made in an article on the subject is this paragraph, which might well become a rule-of-thumb for all business correspondence:

"Make it a rule that all your *outgoing letters* should include the writer's extension number (parentheses the editor's—at least, the main telephone number). A lot of time can be saved by this means."

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B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

Cascade Pole Co., P.O. Box 743, Tacoma, Wash. — Creosoted Douglas Fir and Cedar Poles.

C. M. Christiansen Co. — Northern White Cedar Poles, Pentachlorophenol treated. Plant and Yards, Phelps, Wis.

Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division — 926 Grand Avenue, Kansas City, Missouri—"LONG-BELL" pressure-treated Southern Pine and Douglas Fir Poles—Creosote or Penta.

Piedmont Wood Preserving Company —Creosoted and Creosote-Penta Treated Pine Poles. Plant, Augusta, Georgia. Yards, Virginia, West Virginia and Connecticut. Address inquiries to Box 1662, Spartanburg, S. C.

Texas Creosoting Company—512 Main Street, Orange, Texas—Creosoted Southern Yellow Pine and Douglas Fir Poles. Can also treat with "Penta."

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HOUSTON COUNTY TELEPHONE COMPANY, Erin, Tennessee. Write H. L. Austin, P. O. Box 229, Erin, Tenn., or telephone ATlas 9-3211 or residence telephone No. ATlas 9-2801.

WESTERN ELECTRIC 202 HANDSETS—$3.00 each; magneto boxes—$1.00 each. 2-position 330 line board, 1-position 100 line board, 1 M.D.F. 400 line—all for $100.00. 901 Leich sets $12.50 each. Write Pigeon Telephone Co., Pigeon, Mich.

The following NEW DROP WIRE in odd-size coils of 300-ft. to 950 ft. unless otherwise indicated:

#18-2 Neop. Jacketed Dumbell Parallel Copperweld—
118,545 ft.—$20.50 M ft.
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104-875 ft.—$21.75 M ft.
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82,780 ft.*—$25.05 M ft.
*76,000 ft. boxed in 1,000-ft. coils

All wire guaranteed. All coils factory wrapped in waterproof paper with ripcord. Above quantities offered subject to prior sales. FOB Charlottesville, Va. Pankey Supply Co., Box 1070, Charlottesville, Va. Telephone #3-2115.

PAX TELEPHONE SYSTEM FOR SALE

5—Lineswitch uprights consisting of 500 lineswitches—5 master switches—50 connectors

2—Lineswitch uprights consisting of 200 self restoring lineswitches—2 master switches—20 connectors—All uprights wired for meters—alarms, etc.

Total——700 lineswitches—70 connectors—7 master switches

2—Selector uprights as follows:
1 Upright—20 Selectors
1 Upright—50 Selectors
Fuse alarms—relays, etc.

1—Power Panel—Consisting of 2 Holtzer Cabot inverted rotary converters—2 transformers—2 induction coils—manual switch, to switch above machines—alarm relay—fuses—meter, etc. (Dual operation)

Charger or Rectifier—Exide Silicon—Model U.R. 24-1-12—rated at 12 ampere—23/25 cells—115 Volts A.C.

Storage Battery—23 cells (approx. 18 months)—Type—Exide—TYTEX—E.O.P. 11—200 ampere hr.—1200 to 1220 S.P. Gr. 77° F.—Cat. #52819

Instruments

Approximate—300—Type 40 Instruments
Approximate—600—Type 32-A-14 Instruments
Approximate— 25—Wall and hang up Instruments

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Index to ADVERTISERS

	Page
AC Spark Plug Div. of General Motors	—
Acme Visible Records, Inc.	—
ADC Incorporated	—
Airtronics International Corp.	—
Alphaduct Wire & Cable Co., The	—
Altec Lansing Corp.	35
Aluminum Company of America	—
Aluminum Ladder Co.	—
Amchem Products, Inc.	—
American Creosoting Corp.	—
American Electrical Heater Co.	—
American Steel & Wire Co.	14
American Telephone & Telegraph Co.	—
Anaconda Wire & Cable Co.	—
Ansonia Wire & Cable Co., The	—
Arps Corporation	—
Arrow Fastener Co., Inc.	—
Automatic Electric Sales Corp.	8-9, 28-29
Barber Advertising Specialties, Walt	—
Batlle & Co., Inc., Jos. A.	—
Bell Telephone Laboratories, Inc.	15
Benner-Nawman, Inc.	—
Berry & Co., L. M.	16
Bethlehem Steel Co.	—
Bohnsack Equipment Co.	—
Brady Co., W. H.	—
Brand, Wm.—Rex Div.	—
Buckeye Telephone & Supply Co.	39, 52
Budelman Electronics Corp.	—
Burgess-Manning Company	—
B. Y. Dial Service	—
C&D Batteries, Inc.	—
Cabaniss-Pogue Co.	51
Cable Construction Co.	51
Cable Spinning Equipment Co.	46
Calculagraph Company	—
Carter Directory Co., Inc.	—
C & S Products, Inc.	—
Chance Co., A. B.	—
Chevrolet Div. of General Motors	—
Chicopee Mills Inc.	—
Cleveland Inst. of Electronics	—
Coates Field Service, Inc.	—
Collins Radio Co.	50
Colorado Fuel & Iron Co., The	—
Commercial Cord Company, Inc.	49
Communication Equipment & Engineering Co.	—
Comptometer Corporation	—
Cook Electric Company	—
Copperweld Steel Co.	—
Crane, Inc., Carl C.	51
Davis Construction Co.	51
Davis Mfg. Co.	—
Dial Haven, Inc.	—
Dialight Corporation	—
Diamond Expansion Bolt Co.	—
Dierks Forests, Inc.	51
Donnelley & Sons Co., R. R.	—
Duo-Safety Ladder Corp.	—
E. & C. Contracting Co.	51
Electronic Secretary Industries	—
Everstick Anchor Co.	—
Exide Industrial Div.	—
Floor-Con	—
Ford Motor Co., The	—
Gagne Enterprises, Inc.	—
General Cable Corporation	12-13
General Dynamics/ Telecommunication	2-3
General Machine Products Co., Inc.	—
General Telephone Directory Co.	—
Gladwin Plastics, Inc.	43
Gould-National Batteries, Inc.	—
Graybar Electric Co.	—
Haley & Co., R. G.	—
Hallamore Electronics Co.	—
Hammond Drierite Co., W. A.	—
Harris-McBurney Company	51
Henkels & McCoy	51
Hirsch Organization, Inc., Gustav.	—
Hitachi, Ltd.	55
Holan Corp.	—
Hughey & Phillips, Inc.	—
Indiana Steel & Wire Co.	—
International Teletronics, Inc.	45
Irwin-Auger Bit Co.	—
ITT-Kellogg	4-5
Jet Line Products, Inc.	—
Johns-Manville	—
Justrite Mfg. Co.	—
Kearney Co., Jas. R.	—
Kemode Mfg. Co.	—
Kennecott Wire & Cable Div.	—
Keystone Steel & Wire Co.	—
Killoren Company	53
Klein & Sons, Mathias	—
Kohler Co.	—
Koiled Kords, Inc.	—
Koppers Co., Inc. Wood Preserving Div.	—
Kwal Paints, Inc.	36
Kwik-Mix Co.	—
Leich Sales Corporation	10-11
Lenkurt Electric Co.	—
Lindsay Telephone Supply Co.	—
Lorain Products Corp., The	—
Lynch Communications Systems, Inc.	—
Magnolia Chemical Co., Inc.	37
Mast Directory Co., Leland	51
May & Speh Tabulating Service, Inc.	33
McCabe-Powers Body Company	—
McGrath Engineering, Inc.	—
Midwec	48
Monsanto Chemical Co.	—
Morrison-Pelsue Co.	—
Natco Corporation	42
National-Standard Co.	7
National Telephone Supply Co.	Back Cover
Neubauer Manufacturing Co.	—
Neuses, Inc., P. K.	42
New Telephone Instr. Co.	53
Northeast Electronics Corp.	—
North Electric Company	—
Nylogrip Products	—
Okonite Company, The	—
Olin Mathieson Chemical Co.	—
Onan Division, Studebaker-Packard Corp.	31
Orangeburg Mfg. Co.	—
Osmose Wood Preserving Co.	—
Owens-Illinois	—
Panhandle Electric Sales, Inc.	—
Parsons Company	—
Petersen Engineering, Inc.	—
Phelps Dodge Copper Products Corp.	—
Plastic Wire & Cable Corp.	44
Plastimayd Corporation	—
Precision Multiple Controls	—
Preformed Line Products Co.	—
Puregas Equipment Corp.	—
Radio Corporation of America	—
Railway Communications, Inc.	—
Ramsey Business Equip. Inc.	53
Rawlplug Company, Inc., The	—
Raytheon Company	—
Recordak Corp.	—
Reliable Electric Company	41
Republic Creosoting Company	—
Rockwell Products Corp.	—
Rolatape, Inc.	—
S & G Manufacturing Co.	—
Schauer Mfg. Co.	—
Seymour Smith & Son	38
Sherron Metallic Corp.	—
Sierra Electronics Corp.	—
Sloan, Cook & Lowe Co.	51
Southwire Co.	—
Stampings, Inc.	40
Stewart Brothers	—
Superior Cable Corporation	—
Suttle Equipment Corporation	47
T.E.I. Corp.	—
Telectric Co.	53
Tele-Muff Co.	—
Telephone Repair & Supply Co.	—
Teletype Corporation	—
Tele-Wire Supply Co., Inc.	—
Tel-Tronics Incorporated	51
Templeton, Kenley & Co.	48
Terado Company	—
Thornhill Publishing Co.	48
Tower Communications Co.	—
Transandean Associates, Inc.	—
Tudor & Yager, Inc.	51
Union Carbide Plastics Company	—
United Electric Controls Co.	—
U. S. Cable Constructors, Inc.	—
United States Independent Telephone Association	—
United States Instrument Corp.	35
United States Motors Corp.	—
United States Steel Corp. American Steel & Wire Co.	14
Utilities Contracting Corp.	—
Utility Equipment Co.	—
Utility Service Co., Inc.	—
Utility Tool & Body Co.	53
Vermeer Manufacturing Co.	—
Warren Mfg. Co., The	—
Weikel Line Company	53
Welding Service Co.	—
Western Electric Co.	—
Whitney-Blake Co.	—
Williams Inspection Co., Inc., A. W.	51
Willys Motors, Inc.	—
Wilson Plastics, Inc.	53
Winders & Geist, Inc.	—
Wiremold Co., The	—
Wyoming Valley Equipment Div.	53

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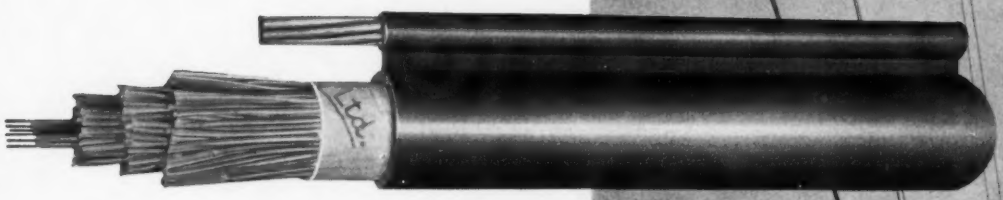

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